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HYGEIA

THE HEALTH MAGAZINE

Published by the American Medical Association

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MARION H. MATCHITT

February, 1930

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TABLE OF CONTENTS

COVER DESIGN
Marion H. Matchitt

PAGE

FRONTISPIECE—TEMPLES OF HEALING 118
V. The Medical Center, New York, N. Y.

AFFAIRS ON TURKEY KNOB 119
Frances Sage Bradley

COSMETICS AND YOUR SKIN 123
Herman Goodman

LOOKING AFTER YOUR CHILD'S MENTAL HEALTH 126
Samuel McClintock Hamill

SOME FACTS ABOUT SYPHILIS 130
Mary H. Swan

LYING LABELS 132
Katharine A. Smith

NUTTY? YES, BUT ALSO FRUITY 135

NOW THAT FARM WOMEN HAVE LEISURE 136
Lucile W. Reynolds

CANCER OF THE MOUTH 140
George E. Pfahler

HOW DOES YOUR CHILD TALK? 141
Marion L. Dannenberg

"SOMETHING I ATE" 143
Miles J. Breuer

DUSTY INDUSTRIES AND RESPIRATORY DISEASES 146

REDUCING DIETS 147
A. J. Beams and E. M. Geraghty

SIMPLE LESSONS IN HUMAN ANATOMY—LESSON XI. THE CIRCULATORY APPARATUS, CONTINUED 149
B. C. H. Harvey

PLAIN FACTS ABOUT HEALTH AND DISEASE:
Undulant Fever 156
Unnecessary Blindness 157
We Speed and We Die 157
Infant Care 158

THE TRIAL OF JOHNNY JONES 159
Elmer E. Ellsworth

HEALTH PURSUITS IN PICTURES 167

HEALTH AND THE SCHOOL 170
What Is Your School Doing to Prevent Colds? A Step Forward in the Training of School Physicians; Supervised Lunch at Fountain School; How to Study the Muscles at First Hand; New Health Books and Teachers' Materials.

NEW BOOKS ON HEALTH 174
Human History; The Commonwealth Fund Activities in Austria; The Layman Looks at Doctors; A Correction.

QUESTIONS AND ANSWERS 175

WHO'S WHO IN THIS ISSUE

DR. FRANCES SAGE BRADLEY, who practices in an eastern mountain state, has written numerous articles for HYGEIA in past years, dealing with mountain folk and with general medical topics as well. DR. HERMAN GOODMAN is a practicing skin specialist in the East.

DR. SAMUEL MCCLINTOCK HAMILL is a specialist in diseases of children and has had much experience in mental hygiene work through his association with the mental hygiene committee of the charity organization of a large city. DR. MARY H. SWAN is a clinical pathologist, or a physician who specializes in making tests that aid in the diagnosis of disease.

An inside story of the national government's efforts to protect the public from the misrepresentations of makers of quack medicines is told by KATHARINE A. SMITH, who is connected with the food, drug and insecticide administration of the Department of Agriculture. LUCILE W. REYNOLDS is master farm homemaker editor of *The Farmer's Wife*.

With this issue begins a series of articles on cancer. DR. GEORGE E. PFAHLER, who assembled the series and wrote the first article, is professor of radiology in an eastern college. MARION L. DANNENBERG'S article on speech defects in children is based on an interview with MRS. MARY SUMMERS STEEL, instructor in defects of speech at the graduate school of medicine of the University of Pennsylvania. DR. MILES J. BREUER is a practicing physician.

Persons who want to lose weight are constantly being warned against using dangerous drugs and worthless bath preparations. Following up the physician's advice that sensible dieting is the only safe way to reduce, HYGEIA presents "Reducing Diets," by DR. A. J. BEAMS and E. M. GERAGHTY. In the March issue will appear "Diabetic Diets."

DR. B. C. H. HARVEY is a professor of anatomy. ELMER E. ELLSWORTH is principal of the Peirce School District at West Newton, Mass.

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TEMPLES OF HEALING

V. The Medical Center, New York, N. Y.

Affairs on Turkey Knob

By Frances Sage Bradley

"Sometimes," Cinthy Ann spoke apprehensively, "I almost wish the revenues'd run Ezry in. Hit'd ease up on everybody but him."

"HIT'LL be marked, sho's you bawn," declared Cinthy Collett, and Lorene Wakefield agreed. One remembered how her sister-in-law, when she was expecting, had watched by the bedside of her husband's dying mother, and six weeks later her baby came with a wheeze just like the old lady's death rattle. The other recalled that her cousin's step-brother had been born with red mottled hands after a bloody fight his mother had witnessed shortly before his birth.

These women were the nearest neighbors of the Coggins family, though a trip to the Coggins cabin on the further side of Turkey Knob took Mrs. Wakefield the better part of a day going and coming. The Colletts lived nearer. Women on the Knob could not gossip from porch to porch nor run a child to the back porch to borrow a skillet or romper pattern. Nevertheless a kindly feeling glowed from every hearthstone, and only an extreme case like the present justified a discreet exchange of confidences and quilt scraps.

"I don't know what to make of Ezry," puzzled Mrs. Wakefield, matching her pink star with the green of her friend. "Of co'se he never saw the day he was good enough for Frony Bryson, yet he hasn't allus been like this. As a kid growin' up he was good enough to them he liked, yet he was forever raising a row with young uns littler'n him; and he was mean to stock. I mind a beating his daddy give him for nigh about ruinin' a colt the old man was aimin' to break to the plow. He wasn't what you may say wild, but just high-sperited and overridin'. His folks couldn't han'le him. I reckon that was why he left home young and got somebody he could pick on. But po' Frony has sho broke under it. She's like a old woman, and she's had no health sence her and Ezry married. The ways of Providence are sho past onderstandin'."

Carefully Mrs. Wakefield adjusted the red and orange and green points before tacking the resplendent rays of a setting sun in their proper relation to the stars of her cherished constellation.

"Aw," protested more vigorous Cinthy Ann, "you know good and well hit's licker. Long as Ezry only made the stuff for them city guys he was peaceable enough, but he took to drink hisself. What I don't see is how Frony's goin' to manage when she's flat of her back, what with all them chillen, the boys not yet hefty enough to work in the timber and bring in regler money, and Ezry drunk in the cove all day. Sometimes," she spoke apprehensively, "I almost wish the revenues'd run Ezry in. Hit'd ease up on everybody but him, and seems like Frony has took off'n him and took off'n him till hit's onendurin'."

The older woman revived the smouldering fire, shifted oozing logs and sent showers of sparks spangling up the black-throated chimney, while chunks of half-charred bark thumped into the ashes below. A few pine knots started a blaze and, with a saving grip on her pipe, the tidy housewife "redded up" the time-worn hearth with a bronze turkey wing from the wilds of the Knob. Cinthy Ann produced her pipe from the depths of a voluminous pocket, accepted the hospitality of her hostess' little red box, and the two friends dropped their stars for a moment's relaxation, drawing their ladder-back chairs close to the fireplace. A shaft of light from the half open door threw the corners of the room in somber shadow, but tongues of flame, fragrant with resinous pine, flashed their constellation in bold relief. It was a masterpiece.

"Hit's bardaceous," Cinthy Ann declared. "You uns live too fur to know the goin's-on at the Cogginses. In reason ther business is ther'n, and you know good and well I'm no meddler. But Frony is my friend and sometimes when things in that cabin sound onnatural or"—sharply closing and unclosing her stiff-slatted sun bonnet—"when they don't sound at all, well, I'm p'int blank afeared to open ther do'."

Tense nerves yielded to the soothing effect of Burnham's Short Cut. "Of co'se," puffing more leisurely, "I reckon when Frony's time is up I'll holp her like she has allus holped me and like I promised I would, but my mind will sholy be eased when mother and child comes through. We've mostly had our babies turn and turn about, but this is Frony's seven to my five, and she's been po'ly from the fust-off. I've never failed her except when Rosy Belle come unbeknownst, and with the last one durin' the freshet when old Tempestu'us was on the rampage and I couldn't git acrost the creek. Ezry took keer of her then—such as it was," she added scornfully.

Mrs. Collett spit beyond the sputtering logs, rinsed her mouth and refreshed herself with a gourdful of fresh spring water from a bucket beside the door.

"When I got thar on the third day Frony was in a plumb misery on her knees befo' the fire scrapin' smut from the chimney back to mix with lard. The man wouldn't even give her a case knife or axe blade to cut short her afterpains. I never said nothin' but I 'low when Frony wanted the shears again she knowed to look under her feather bed. Of co'se Ezry didn't know no mo'n a rabbit what to do for the baby. Thar was no raisins nor nutmegs in the house, and he hadn't put a thing on the cord. The little feller had a right to be ruptured. Hit's no wonder he died." She tapped the ashes from her pipe, and Cinthy Ann resumed her patchwork.

Mrs. Wakefield had done well to exonerate Ezry as a trouble maker before he took to drink, but there are two things about stilling. A merchant may become indifferent, even have an idiosyncrasy to his own stock in trade. The odor of milk may sicken a dairyman, yeasty bread may rise in the throat of a baker, or the sight of raw meat may convert a butcher into a vegetarian. A full-fledged flapper may conceivably learn to loathe cloying sweets or a bartender may become a teetotaler. But nothing like this happened to Ezry, the husband of Frony and father of her children.

Again, the effects of drink are as manifold and varied as those of influenza or eczema. The same brand will make one man tearful and another amiable even to the point of idiocy; one humble and another pompous and profound. It will reduce one to a bestial level and exalt another to heights of lofty achievement; will render one so generous he longs to bestow his very soul on a passing stranger, while another grows morbid, morose, murderous. This last was Ezry.

"When that man's in licker," Cinthy Ann stated with authority, "he'll like as not beat up the whole family from the mommy down, and hit'd be resky for Frony in her condition. She can easy have childbed fever or milk leg, and she'll sho mark that baby—if she don't plumb lose it like the last one."

"No wonder the chillen looks like skeered rabbits," added Mrs. Wakefield. "I know in reason Frony hides out the littlest ones all she kin, and they tell me the oldest boys fair hates the sight of ther paw and never comes anigh the cabin when he's thar till time to crawl into bed. Junior and Bud caint be mo'n fo'teen or fifteen," she speculated. "They've not got ther growth yet."

"They're not as you may say men," admitted Cinthy Ann, "and of co'se they've got no l'arnin', for Ezry won't let 'em git a second book till they're plumb through with the fust. They'll likely stay in that fust reader the rest of ther days. But they're tall for ther age, are as wiry as pant'ers, and they've got ther maw's way of sensin' things. They know good and well that mountain folks don't live like ther'n. Why, ever sence them boys was little fellers gettin' into mischief like all young uns seems like ther daddy has been a-beatin' 'em; calls 'em dumb and stuck up 'cause they won't yell and sass him back. Many's the time he's roped 'em to that black jack behind the cabin and raised a welt with every blow of the hickory, tryin' to make 'em yell. And they won't."

"You'd think," suggested Mrs. Wakefield, "Ezry'd see whar they git ther close-mouthed ways, 'specially Junior. They're the spittin' image of ther paw but for his stoop shoulders and bushy whiskers and shifty eye. If Ezry

don't watch out he'll find hisself breedin' trouble." And again the women compared stars.

In these parts the career of woman was limited to her own fireside. Desertion of her post was unthinkable, and divorce an abomination in the sight of the Lord. Frony had borne her burdens as became a mountain woman. First had come Junior and Bud, then others followed as fast as nature permitted until an infant death left Rosy Belle, the "baby one," longer than was the custom. Her father, having officiated at her birth, felt more than a paternal, even a professional, pride in her accomplishments and, during certain lucid moments, he indulged the child in resorting to tantrums to achieve her ends. This was all very well as long as Ezry remained himself, for he was by nature a kindly disposed man. But these intervals grew shorter, the lapses longer, and his outbursts of temper became the terror of his family.

During one of these falls from grace Rosy Belle, uncontrolled and too young to discriminate between a sober father and one who was not, threw herself on the floor kicking and screaming to go with her brothers to the pasture. Deaf to the entreaties of her mother, blind to the lowering rage of a father too drunk to know what he was doing, the little girl found herself snatched from the floor and held as if in a vise.

The more she fought, the tighter became the grip, the more persistent the pressure of the powerful hands. Unyielding, relentless, back, back over bony knees the man bent the struggling, writhing body until something snapped, and the child sank quivering, spent, helpless for the rest of her days.

Naturally nothing could have been farther from Ezry's befuddled brain than to do such a thing to his little daughter, and probably none knew the suffering and remorse that were his in moments of reflection. But the constant sight of Rosy Belle's face growing whiter and thinner, and of the spindling arms dragging her limp, withering body over the splintery floor, the silent reproach of his ailing wife, and the loathing of his young sons infuriated the brute. There was nothing for it but to drown his troubles in more drink and to enforce a semblance of traditional discipline in his mutinous household. He became daily more surly, turbulent, abusive. Finally he cut slits in one end of a razor strap and hung it from the fire board handy for use on the first one that crossed him.

The lash became slippery and shiny with use. Its edges curled like the lips of the boys, like the lips of snarling dogs. In a state of rancor and malevolence Junior and Bud became men before their time, and any pretense of patience or endurance they might have derived from their mother was submerged in an overwhelming sense of injustice and resentment and in a fierce longing for the prowess of men. They avoided their father.

Without a word the boys reached for their guns on the wall, took a long look at their mother, lying helpless on the bed, and left the cabin.

It was really a cause for wonderment how news traveled over such unfrequented paths, yet the matter of "the Cogginses" was the scandal of the mountain. One could not "fault" Junior for looking like a thunder cloud or Bud for a flaming eye and quivering lip when the youths, sensitive, reserved and perplexed, were asked about their mother. More and more they kept to themselves, fishing in secluded pools of the sparkling Tuckaseegee or bringing to their mother squirrels, pheasants and wild turkeys so neatly picked off that only a missing eye showed the unerring skill of these youngsters

with the rifle. With shotguns, also, they became past masters.

With maternal optimism, Mrs. Coggins hoped each time for better luck. She was expecting about the first quarter of the moon, a good omen for both mother and child. It happened, however, that her friends were better prophets. Ezry came home one night drunker than usual, beat up the whole crowd, and the baby came before morning. Only by roundabout means did Cinthy Ann learn the news, but over the tedious trail she trudged each day and, ignoring Ezry's churlish hospitality, rendered a personal service to mother and child or prepared a welcome meal for the family.

Mrs. Coggins was slower than usual in getting around, and the baby, though free from physical blemish, seemed puny and fretful. Rosy Belle also demanded more care and attention, more strength and patience than were possible from an ailing woman.

Since her accident the paralyzed child alone had seemed immune to her father's fury, but at last in a feeling of false security she hobbled one night between her struggling parents only to have her wabbly home-made crutches pitched out into the night and herself flung into a far corner of the cabin. In a frenzy the mother sprang to the relief of the crumpled child and Ezry, full of rage and moonshine, seemed beside himself.

When the boys came home later they found the new baby wailing on a tousled quilt and the other children huddled around the bed where their mother and Rosy Belle lay bruised of body and broken of spirit. Their father had vanished from sight.

In the flickering firelight the lads sensed the scene that had taken place and exchange a fleeting glance.

Without a word they reached for their guns on the wall, took a long look at their mother and, with caps pulled low, left the cabin.

Ezry did not come home for breakfast the next morning and there was no word from the boys. But before the day was done, a gang from the still in the cove brought between them a hulk of dangling arms and legs held together by what was left of heavy clothing after two loads of buckshot had done their work.

A friend of the family went for Sheriff Wilkerson.

"Well," replied that official, "hit was bound to come. You cain't put it apast the boys. They couldn't do no diff'ent." He paused, scanned the faces about him, all mountain men eyeing him intently, confidently. "But you'uns know a sheriff is a powerful busy man. I'm late already in meeting a man out Lick Skillet way, and what with roads like they are and ever'thing, hit's no ways likely I kin git back till after the 7:45. That's time for consid'able business," he suggested.

Tightly drawn lids relaxed. A discard of old quids and substitution of fresh ones represented the satisfaction which noncommittal faces refused to reveal. The sheriff fished deep in his jeans.

"Here's my pile, boys. You uns pass the hat around. I reckon Junior and Bud is men enough to know they've no call to fret about ther maw and the young uns while they're gitting on ther feet. Women and chillen'll not perish on the mountain long as thar's Turkey Knobbers left. Them boys is all right," he concluded briskly, "but for Gawd's sake have 'em onderstand that the West is a right healthy place—long's you keep agoing."

In spite of the condition of the roads "and ever'thing," the sheriff made Lick Skillet on schedule time. And the boys made the 7:45.

"I'm late already in meeting a man out Lick Skillet way," said the sheriff.

Cosmetics and Your Skin

By Herman Goodman

COSMETICS have been used since the beginning of the race. If this seems an extravagant statement, records exist which indicate that the Atlanteans, a people who are said to have inhabited the lost land in the Atlantic Ocean some 25,000 years before the Christian era, used natural petroleum oil to aid in massage. Certainly it is possible to trace the development of cosmetics through all the ancient peoples of the earth.

Pacific and Atlantic

In a Chinese beauty shop in San Francisco. The mother is wearing the traditional slick hairdress of old Canton, while the daughter is having her permanent wave set.

The Chinese had their system of cosmetics. You recall the pictures in your geography books of the Chinese ladies with bound feet; that mutilation of the feet was part of cosmetics. You also remember that the Chinese gentlemen of leisure had the habit of letting their nails grow without cutting, and there were pictures in the same books of nail guards for the fingers of the mandarin.

The Egyptian system of cosmetics had to do not only with the living but with the embalming of the dead. When the tomb of Tut-ankh-Amen was opened recently and his mummy unwrapped, the discoverers could still get the odor of the perfume substances used many thousands of years ago. The perfume material was analyzed and was found to consist of 10 per cent of various aromatic balsams and 90 per cent of fats.

The ancient Hebrews learned the art and the practice of cosmetics from the Egyptians. At that time, cosmetics were part and parcel of religious practices. The perfume materials were to be used only in religious ceremonies. The ancient Greeks knew about cosmetics, and in the days of ancient Rome perfumes were extensively used. The rich gentlemen of the time went to the great baths attended by slaves who carried different perfume odors to be used on different parts of the body. It was fashionable to use one perfume on the head, another on the face, a third on the neck, and so on. At one time the sale of perfume was prohibited because so much was being used that there was an anticipated shortage of perfume for religious services.

The Italians, the French, the English, all had their early exponents of the cosmetic art. There are books in existence in these languages, and statements of the articles of cosmetic value are given. In fact, with few changes in terms, one might imagine that some of the statements of Crito from about the time of Christ were modern catalogues of large cosmetic firms doing business today.

With the dark ages of learning, the knowledge and the application of cosmetics were restricted. Princes, popes and potentates had

their private laboratories and their privy chemists, but on the whole there was little if any progress in the field of cosmetics. Natural flower odors were developed in France, and even today the southern part of France is the flower garden for perfumes.

With more modern times, a change came in cosmetics. Chemists analyzed flower odors. Perkin founded the aniline dye industry, and from its small beginnings great things have evolved so that the result of the work with the coal tars affects every one in some manner. New odors were found; old odors were imitated, and the natural odors were improved upon. New methods of manufacture came into vogue so that it was possible to get wide distribution among everyday persons instead of a limited sale to the powerful and the rich.

American Beauty Costs Two Billion Yearly

The industry of cosmetics has advanced by leaps and bounds. Each year finds new outlets for the cosmetic laboratory. The Department of Commerce announced that according to data collected for 1928 perfumes, cosmetics and toilet articles manufactured in this country by firms whose output was over $5,000 annually reached the manufacturing value of more than $177,000,000. It is estimated that the retail value amounted to five times as much. In fact it has been said on excellent authority that some two billions of dollars a year are spent on beauty by American men and women. There are 41,000 beauty shops and 80,000 barber shops in the United States today, with about 170,000 women operators and 250,000 barbers.

The requirements for the preparation of the beauty shop operator, manager and beauty school instructor are not uniform. Nineteen states have laws on the subject, but these laws are not very helpful, although they may be a step in the right direction. Whether the problem will ultimately be settled by legislation is uncertain. The sanitary and hygienic provisions of the laws regulating beauty schools and beauty shops as well as barber schools and barber shops are important from the public health standpoint.

As a physician interested in public health as well as a specialist in diseases of the skin and the care of the skin in health, I am interested in these provisions. I am interested in the prevention of infectious and contagious diseases through the medium of cosmetic care. I have no quarrel with cosmetic procedures that are in fact cosmetic procedures, but the cosmetic industry will be better off financially and will gain the good will of a greater part of the community, if the quasi-practice of medicine and surgery is dropped from their procedures. I am assured by leaders of the industry that there are few persons in the cosmetic business who do not frown upon this assumption of the medical art. In fact, a recent questionnaire on the business of the cosmetician and an analysis of the type of service rendered seems to indicate that any encroachment on the practice of medicine and surgery by the beauty shop is slight.

Extravagant claims as to the virtues of cosmetics used on the skin and scalp should be ignored. Merit without exaggerated claims should be the basis of the trial of new cosmetics. Physiologic knowledge should not be flaunted by statements regarding any cosmetic no matter how well prepared. There are limitations to the character of absorption of the skin. Thus, it would be difficult to prove that any substance applied to the outside of the skin could be forced into the skin and act as nourishment or as a skin food.

The user of a cosmetic should consider the claims made. Here is a cream which is supposed to grow hair if rubbed on the scalp but which is guaranteed not to grow hair on the face. Here is a depilatory for the removal of hair which is supposed to cause the loss of unwanted hair permanently. I do not understand how this can happen, for the hair that we see on the surface is only an outgrowth of the vital growing spot inside the skin. Certainly, no application of medicine can pierce the skin, destroy the vital spot and permanently cause hair not to grow unless at the same time the skin is injured to such a degree that a scar forms.

Faces Scarred by Cosmetic Use of X-Rays

This is exactly what happens in those persons who are so misguided as to permit the skin with unwanted hair to be exposed to the x-rays. Often the term x-rays is not used and the user denies that x-rays are being used. There are no rays, x-rays or any modification of x-rays that can be used on the skin permanently to remove unwanted hair that will not at the same time cause such changes in the skin as ultimately to cause unsightly scarring and even lead to further danger. There is a safe, slow and sane method of removing hairs from the face by the negative galvanic current.

Hair dyes were for a long time the target of anticosmetic advocates. Some years ago the skin specialist always had one or more patients with skin poisoning from hair dyes. At the present time, there are few such cases, although there is increased opportunity for examining patients injured in the cosmetic industry. The reason is that the better shops use only the newest and safest hair dyes and the operators are more skilled in their use. Furthermore, if the customer has any trouble with the scalp or any eruption of the skin about the scalp, beauty operators refuse to dye the hair. There are many hair dyes on the market today and the

sales are increasing, yet the bad results are fewer and fewer. Still, each person should be carefully studied before she submits to hair tinting; tests can be made that will foretell danger in a particular dye.

Well made cosmetics have a place in the daily life of many persons. Economic demands force some persons with gray hair to get it tinted in order to hold their jobs or to get new ones. We need dentifrices, mouth washes, face lotions and soap. There are needs for scalp washes. Deodorants are essential at times. But there is no need for scarehead advertising either for or against the use of modern cosmetics.

Some Fallacies Exploded

Face creams do not grow hair on the face. Soap and water never hurt the normal skin. There is no objection to using cream substitutes for soap if one wishes to do so and recognizes that one is actually using soap in cream form. It may well be that the manufacturers and purveyors of soap in cream form do not know that it is soap they are selling and that their claims are made in good faith.

In such cosmetic procedures as permanent waving, finger waving, marceling and manicuring, extra skill is required by the operator in order that the process may be entirely free from danger. But if one considers the tremendous number of cosmetic procedures daily, on such a predominating proportion of the population, the number of instances of damage is exceedingly slight. In fact, almost any injury from a beauty procedure is certain to hit the front page of the newspaper, and the fact that it is still news indicates how really uncommon such injury is.

The manufacturers of cosmetics do not wish to kill the goose that lays the golden egg. Every manufacturer is on his toes to give the best ingredients and to gain the good will of his customers. In nearly every instance the purchaser of nationally known and advertised goods will get value and cleanly made cosmetics with pure ingredients. The coloring materials used today are for the most part those approved by the Department of Agriculture for use in coloring food. And if the colors are good enough to eat, they are good enough for lip stick, face powder and rouge.

There are a certain number of persons who are sensitive to some one thing, and if only a little of the substance comes in contact with their skin, the results are tremendous. Thus some persons have to get only a little dust from certain plants, and they experience reactions of asthma or hay-fever. A little ordinary medicine, as quinine, in some sensitive persons causes an eruption of the entire skin.

Few Persons Harmed by Cosmetics

The number of persons who are sensitive to the ingredients of ordinary cosmetics is small. The skin specialist in office practice and clinic work sees such sensitive persons from time to time, and in most instances the patients do not recognize the cause of their trouble. They persist in using the material that causes the eruption. They say, "Oh, we have used this preparation for years, and it has never hurt us. You must be mistaken."

On the whole, throughout this country, it would be difficult at any time to collect one hundred persons who have been harmed by the application of cosmetics. The price of cosmetics today is high enough to let the manufacturer give the best materials; the manner of manufacture is controlled, and the rank and file of operators have sufficient training in their art that one may feel safe in their hands.

H. Armstrong Roberts

Most behavior problems start before the child enters school. The child must early be taught self-reliance, and learning to dress himself is one lesson in this virtue.

Looking After

By
Samuel McClintock Hamill

IT SEEMS odd that during the years in which we have been interesting ourselves in the physical health of the child we should have overlooked almost entirely the profoundly important question of mental health, and yet this is exactly what has happened. Perhaps it was a natural error. It is hard to build a sound mind in a sick body. Indeed, when there is evidence of mental illness, the first important step is to determine that it does not have its basis in some underlying disease of the body. In any event, by a process of evolution we have entered upon and advanced some distance in the safeguarding of the mind of the child as well as his body.

Psychiatry is a fairly old science but, just as physicians neglected the physical health of children through many years, so did the psychiatrist at first devote himself almost exclusively to the mental problems of adults. It is not unlikely in studying the history of his adult mental cases that the psychiatrist finally realized that many of them could be traced back to influences that were operative during childhood or even as far back as infancy. It would then become evident that had he been able to direct the mental life of his patient during those early years, in all likelihood he might have succeeded in removing those baneful influences and thereby have prevented the diseased mind of adult life.

The mental status of the child is determined by his behavior. His behavior in turn is largely the product of the influences that surround him. The child comes into the world with a mind totally undeveloped. He possesses an instinct for food with an instinctive power to express this desire. He has a moderate reaction to pain stimuli. He has a limited capacity to engage in purposeless, uncoordinated movements of his extremities. Beyond this, he is more or less an inert mass of flesh and bone. At just what period of infancy the first germs of intelligent action manifest themselves in the normal child it is hard to say. It varies in different infants. It is likely to be confused with the reactions of instinct, which occur almost at birth. It is a universal rule, for instance, that the new-born when turned over to his mother by the nurse at the end of her lying-in will instinctively recognize the change and frequently resent it.

Perhaps the first evidence of conscious action in the infant is physical motion of his arms and hands. He recognizes the fact that he can move them and he quickly develops an inordinate degree of curiosity in doing so. Infants a few months old spend hours in studying the movements of the fingers of their uplifted hands.

It is often difficult to determine the origin of infant behavior, but whatever may be its cause the recognition of certain resulting behavior trends is important because of their ultimate

Your Child's MENTAL *Health*

H. Armstrong Roberts

Rugged physical health is the best basis for good mental health. When there is mental illness, the first step is to look for some underlying disease of the body.

effect on the mental and physical health of the child. One of the earliest is the act of crying. The infant that is physically normal, theoretically at least, should not cry unless some physical pain is caused by a sticking pin or an "accidental" bump by a somewhat jealous older brother or sister, or as the result of a sudden emotional experience from some cause such as a loud or unusual noise. Actually, many physically normal babies cry, some of them a great deal, all of them unnecessarily, and mainly because they have been badly trained. It is extraordinary how quickly an infant recognizes the fact that the act of crying enables him to obtain that which he desires.

A few years ago, I had what was to me an amusing experience, but to an interested grandmother, mother, trained nurse and child nurse, a tragedy. One of three boys, then a perfectly normal infant of 2 years, had been accustomed to being placed in his crib and left to drop off to slumber when the spirit moved him. The advent of a younger brother brought a trained nurse into the home. Her conception of child training did not accord with mine. She suggested to the youngster's nurse that it was criminal to have a dear little baby in a dark room all by himself. The suggestion had a strong appeal for his nurse and she promptly adopted the habit of sitting with the youngster and cooing him to sleep. The little fellow, who had always been so good at the retiring hour, suddenly developed the habit of fretting when he was left alone in his room.

After this had gone on for a few evenings an investigation was started, in cooperation with the mother. As expected, the nurse was discovered with him. Nothing was said that night but on the following afternoon the mother announced that no one should enter the youngster's room after he had been put to bed. Fortunately, she decided to see that the order was carried out. When the nurse retired the contest began. The youngster wept. It was a tearless cry, easily interpreted as a demand for the return of his nurse. After the weeping had continued a few minutes there were stealthy footsteps in the hallway, and the grandmother was intercepted and persuaded to return to her room. The crying continued. The appeal soon overcame the trained nurse. A door was opened quietly, her figure appeared in the hallway and stealthily approached the weeping infant's room. She was stopped and told in perfectly understandable language to devote her energies exclusively to the new-born.

The weeping infant soon discovered that his command was not to be complied with and passed into the land of nod. The next night the youngster was put to bed, the door closed, and there was never a whimper. This victory was easily won; the numerous watchers were satisfied, and a fortunate baby broken of a habit

which, if indulged, might and probably would have resulted in disaster.

The simple act of sitting by the child at bedtime or returning each time he calls us back develops a trait that is normal to every child; namely, a love of power, "a desire to control his surroundings for his personal satisfaction." It should be superfluous to tell any one that the overindulgence of this trait is one of the most unfortunate things that can befall any child, and yet in our daily contacts we encounter many self-willed, domineering children. It is amazing how early this trait may manifest itself. To keep it within normal limits is one of the most important functions of parenthood. This is relatively easy, but to correct it if once established is profoundly difficult. And is there anything more unattractive or distressing than the self-willed child? There is certainly no trait more destructive to his adult experience!

Child Imitates Parents' Behavior

The impulse that leads a loving mother to sit by the bedside of her infant until he sleeps is often one of fear, not fear for herself, but fear that something, ill defined in the mind, might happen to the baby. She fears that he himself may be afraid in the dark. Perhaps she had this fear in her childhood. It used to be more common. We think we are more enlightened now. But even yet one hears far too often the old refrain, "Mother is here, darling; don't be afraid." The very thing that such a mother most wishes to prevent she is herself suggesting, a sense of fear in her child. We have far too little appreciation of the very young child's ability to interpret our actions and reactions, to catch the suggested feature.

Much of a child's behavior is determined through imitation. What a burden of responsibility that places on the shoulders of parents, educators and all those who have to do with the training of the child! If only our children would imitate the good things we do and overlook the bad, our consciences would rest much easier. Unfortunately, they have not the power to discriminate between the good and the bad.

In general our children love us and are proud of us. They feel fully justified and are eagerly interested in doing the things we do. Therefore it becomes an easy matter for us to inculcate bad behavior habits by manifesting our own weaknesses in their presence. Just a little while back, a psychiatrist told me of a small child that was brought to him because she had developed the habit of lying. The condition had existed for some months. A careful survey of the child's environment revealed, in general, a satisfactory condition. The parents were persons of unquestioned integrity; their interest was sincere and rational; they curbed their natural tendency to exaggerate the youngster's importance. The mother spent much time in her training and had a wise conception of the subject. Every safeguard seemed to have been placed about the child so that her mental and physical development might be normal.

After minute questioning in several conferences the mother chanced to say that she often gave the child simple duties to perform with a view to developing a sense of responsibility. When asked to name some of these she answered, "Such things as carrying messages to the servants." The psychiatrist was interested in knowing the kind of messages. It was revealed that every once in a while when some one called on the mother, whom she could not or did not care to see, the child would take the message to the servant, "Mother is not in." The youngster made no comment but evidently was much impressed and soon found it convenient to imitate the mother's methods and deny certain acts of which she had been guilty.

Here was a behavior trend, the product of imitation, which, had it not been quickly recognized, intelligently investigated and handled, might easily have developed into a fixed and dangerous habit. It well illustrates the great importance of proper parental conduct at all times. It might be well for parents when a child first manifests abnormal behavior to search themselves to see whether there may not be something in their own conduct that the child is imitating.

Parents Must Avoid Emotional Outbursts

Parents should especially avoid emotional outbursts.

Have you ever observed the effect of family bickering on the developing mind? If not, and opportunity offers, study carefully the expression and conduct of the child. He is profoundly disturbed emotionally; he attempts to determine which of his parents is at fault, and usually succeeds; his sympathies rest with the one he considers to be victimized, and antagonism toward the other is engendered. If the situation is often repeated all lack of respect for the advice or opinion of one or the other parent results, and that parent's influence for good is likely to be permanently destroyed.

The fact of the impressionability of the child's mind cannot be repeated too often. Dr. Esther L. Richards has used an apt illustration in defining this by saying that "a child is like a highly polished mahogany table, prone to take the dust and scratches of all sorts of things in its environment."

It is not only such shocking things as family quarrels that impress him. He is constantly receptive and ever watchful. To quote again from Dr. Richards: "He senses parental attitudes of mutual distrust; he senses parental attitudes toward respect for religion and for the

observances of the law. Every slurring phrase, or sarcastic remark, or angry rejoinder registers upon the mind of the child, no matter how absorbed he may appear to be with play or book, and, unconsciously, fashions his own growing mental attitudes and outlooks on life. A little daughter who hears her mother criticize her father to a select audience of four of the mother's most intimate friends is bound to pay little attention to maternal appeals for loyalty and consideration and affection as an incentive for good behavior. The 14 year old boy who overhears his father exchanging questionable stories with a few club fellows at a chance meeting on the golf course cannot be expected to listen with respect to that gentleman's official pronouncements on the dangers of 'petting.'"

Children judge us not by what we preach but by what we practice.

It is impossible to recite the hundreds of abnormal behavior reactions in children. In the foregoing I have selected a few to illustrate these points: that they can be established at any age from early infancy up; that they are subtle in their beginning and development; that they are easily preventable; that if neglected they are hard to cure and usually remain as permanent handicaps through life; and, finally, that they are nearly all due to faulty parental guidance; in other words, they are due to parental ignorance.

Preschool children of Western Springs, Ill., whose physical health standards are as high as home hygiene and medical care can bring them. This round-up of preschool children was organized by the Chicago Tuberculosis Institute last summer.

Who among us would enter the profession of teaching or undertake the conduct of a business or even the baking of a cake without first gaining the knowledge necessary to make our efforts successful? Yet men and women will enter into matrimony, beget children and undertake the most serious responsibility God has placed upon man, the guidance of the spiritual, moral, mental and physical development of a child, without a single atom of preparation.

The pathos of it all!

Thousands of lives are sacrificed annually on this altar of parental ignorance; many more thousands of those who survive are physically wrecked; other thousands are rendered mentally unhappy and wholly ineffective; many end their lives in mental hospitals; and the criminal and delinquent classes are greatly augmented, all because men and women are willing to assume this most serious responsibility of parenthood wholly unprepared to discharge it.

Those who are responsible for shaping the behavior of children have a wonderful opportunity. I can conceive of no more important joint guidance than that of parent and teacher. If they are frank and honest with each other and both willing to give time and thought to a careful study of the child's behavior, they will be able to maintain his normal mental health, to recognize his wrong slants in their beginning and be more competent than any one else to locate their cause and secure wise counsel in directing his future.

Unfortunately, most behavior problems that the schools meet have been established before the child has entered school. During this stage of development the responsibility rests with the parents, but, through the medium of the Parent-Teacher Association, the school can have a tremendous influence.

Many months of medication are necessary before a person with syphilis can expect a cure. Marriage is not to be considered until the physician gives his approval.

Some Facts about

By Mary

SYPHILIS, its treatment and its care, is being viewed in a far more wholesome manner than formerly. The interest in its prevalence and control is world wide.

Since persons, as a rule, do not wish it to be known that they have syphilis, and since physicians desire to protect their patients from publicity, there has not been a readiness on the part of physicians to report this disease routinely along with other infectious conditions to civic health departments. For these reasons, reliable statistics as to the occurrence of syphilis have been difficult to obtain, but methods of reporting have now been so arranged that the patient's identity may be withheld.

It is important to have accurate figures regarding the prevalence of any infectious disease in order to establish a sound basis for proper control measures and for determination of improvement from year to year.

In America, special surveys have been undertaken in representative areas by the U. S. Public Health Service in cooperation with other medical units. All physicians, hospitals and clinics were asked to report the number of patients with venereal diseases seen on a certain appointed day. There was good cooperation in carrying out this method of taking the census of venereal conditions. Such a survey was made in areas of New York State exclusive of New York City, May 2, 1927. It was found that 14,476 patients, or 2.63 persons per thousand inhabitants, sought medical care for syphilis on that day. The report for syphilis from the entire state of New York for 1927 was 3.31 persons per thousand inhabitants. The annual rate for tuberculosis in New York State for 1927 was 1.7 persons per thousand inhabitants.

Altogether, the special census of venereal diseases has covered representative areas comprising approximately 12,000,000 persons. It is estimated that 511,256 persons in the United States are constantly being treated for syphilis and that 200,000 were infected within a year.

The prevalence of syphilis in the city is five times greater than in the country, it was found. The rate of infection among males is 4.85 per thousand and the rate among females is 3.02 per thousand. The average rate for both sexes is 3.95 persons per thousand population.

The province of Ontario, Canada, reported 1,477 persons with syphilis and 1,551 persons with tuberculosis in 1928.

Statistics indicate that syphilis as well as tuberculosis has a real claim for public interest and concern. Statistics also show that improvement rewards efforts expended toward adequate treatment and control.

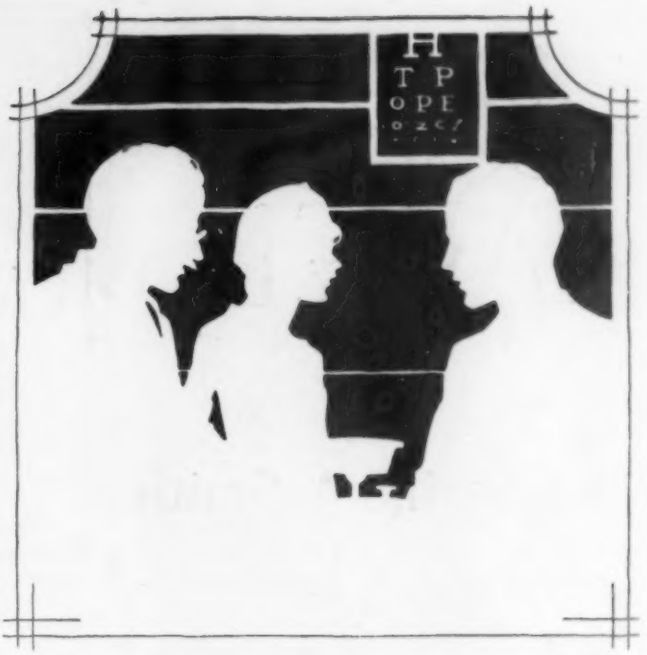
Earnest effort has been made in Great Britain for some years to promote improvement in the management of treatment of venereal diseases. In 1920, there were 43,000 persons with syphilis seen for the first time in the treatment centers, while in 1927 only 23,395 patients with syphilis were examined for the first time. These figures are compiled from a study of England and Wales only.

Study of patients who have been treated adequately, particularly those who have begun treatment during the early stage of infection, indicates that such patients may expect good results and that they will be spared the late serious effects which tend to appear in the nervous system, the bone, the liver, the heart and the skin.

Since there are so many persons in our communities infected with syphilis it is important for the public to be familiar with necessary requirements in the program of treatment in order that there may be more intelligent cooper-

Syphilis

H. Swan



A person who has once had syphilis should report for a yearly health examination and keep in close touch with his doctor all the rest of his life.

ation of the patient with the physicians in the effort to obtain effectual and lasting results.

People understand well enough that the treatment of tuberculosis must cover a long period before durable results are secured. Although some symptoms disappear promptly in the course of treatment it is realized that the disease has not been eradicated and that treatment must continue. The same philosophy of acceptance which obtains in the public mind regarding treatment of tuberculosis should extend also to the treatment of syphilis. The cure of both diseases takes time.

A patient infected with syphilis in the early stage should seek a physician at once and should be prepared to submit to many months of medication, if he wishes to avail himself of his chance of a possible complete cure. Any other procedure is almost certainly doomed to an eventual relapse, which would entail a longer time of treatment and observation before good results could be maintained.

When a person with a recently acquired syphilitic infection and a positive Wassermann test undergoes treatment for two or three months, the Wassermann reaction often becomes negative. This point of the first negative Wassermann test I call the "strategic position," because the patient's ultimate welfare depends largely on the line of action followed at this time. It is of the greatest importance that treatment be continued for a long period.

Well informed physicians believe that the disease is not cured when a negative Wassermann test is obtained after a few weeks of treatment. A negative result means that the accumulated products of the infection are eliminated temporarily. The infective agent which causes the accumulation of products is not so easily exterminated. Many courses of treatment are essential, recurring with persistent periodicity, to accomplish complete destruction of the infective organisms even under favorable circumstances.

Because many persons have the false idea that they are practically well when the Wassermann test is negative, they do not heed the doctor's request to continue medication. Such a patient may return for a few more treatments and then in his ignorance lapse from treatment for several months. This is the gravest mistake.

The probabilities are that in the interval without medication the infective organisms which survive at the close of treatment gradually rally and by their activity cause a new accumulation of products sufficient to effect the reappearance of a positive Wassermann test. A prolonged stretch of treatment is often required, involving time, patience and effort, to bring about a reversion of the test to the negative phase.

The infective organism like the tubercle bacillus tends to raise a barricade against attack. For this reason both offensive and defensive methods need to be employed: one directed at a tenacious invader and the other for the purpose of building and maintaining the patient's power of resistance.

A long rest from treatment, taken too soon, is the source of many chronic syphilitic patients. Therefore it is vital that patients, especially in the early stage of infection, cooperate with the physician in carrying out proper treatment measures. Physicians are generally agreed that treatment should be practically continuous during the entire first year of medication or that rest periods between courses should be short.

A patient who has had syphilis should report for a yearly health examination and keep in close touch with his doctor all the rest of his life.

Lying LABELS

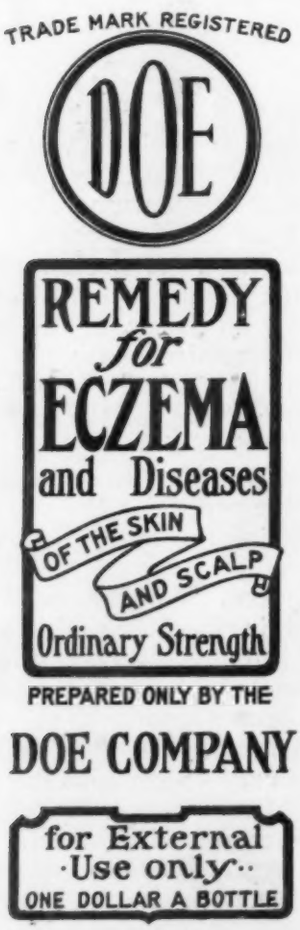
By
Katharine A. Smith

The label on a medicinal preparation before the government took action against the manufacturer.

CLAIMS put forth for the so-called "flu preventives" and "flu remedies" that appeared on our markets during the influenza epidemic last winter are strangely reminiscent of the promises made some thirty years ago by "yarb" doctors and other medicine men of the same school of thought who plied a profitable trade at county fairs and on street corners. In those good old days of unlicensed trade, many a hard-earned dollar was exchanged for a bottle containing a dark, syrupy liquid, which, so ran the hawker's siren song, would cure any or all human ailments from a muddy complexion to galloping consumption.

Nor was the appeal of the cure-all vender of 1900 purely vocal. The bottles, boxes and cartons containing tonics, ointments and pills were bright with assurances of complete and speedy cures. The fact that most of the results promised could not possibly be accomplished by any drug or combination of drugs yet known to man apparently was completely ignored in framing these labels. Furthermore, the all-powerful panaceas so freely offered to our forebears were usually accompanied by printed testimonials designed to convert the most skeptical to a belief in their efficacy.

Some of these preparations owed their popularity, especially among "teetotalers," to their high alcohol content, and others were sought, often all unconsciously, because they contained morphine, cocaine or some other habit-forming drug. The sale of dope-laden mixtures, without suitable label declaration, was particularly reprehensible, in that persons who would shun them with horror if aware of their true identity might quite innocently acquire the drug habit in this way. The chief danger in the self-administration of falsely labeled patent medicines, however, lay not in the fact that they might prove injurious but in the loss of valuable time involved, as those afflicted with some serious disease might rely on them so long that when competent professional advice was finally sought it came too late to control the malady which might have yielded to proper treatment at the outset. On the other hand, a person suffering from some minor ailment might be led



Before

After

50
DOE TABLETS
5 GR. EACH

RECOMMENDED FOR THE RELIEF OF PAIN AND DISCOMFORT IN SIMPLE HEADACHES AND NEURALGIAS, HEAD COLDS, MUSCULAR ACHES AND PAINS, AND AS A GARGLE IN MINOR THROAT IRRITATIONS

Dose ----------

THE DOE COMPANY
U.S.A.

The label on the same preparation after the government took action against the manufacturer.

to believe, from the unwarranted claims for one of these "medicines," that it had performed a miraculous cure, when, as a matter of fact, nature alone and unaided would soon have overcome the trouble. Not only was the public being cheated in this way. Honest and well informed manufacturers who wished to sell their preparations under truthful statements were forced into an unfair competition with unscrupulous or ignorant purveyors of articles put out under exaggerated claims of accomplishment.

Viewed from any angle, then, the sale of falsely labeled medicines constituted a distinct fraud against the American people. Accordingly, Congress, in 1912, took steps to curb this fraud by amending the federal food and drugs act to make illegal the sale in interstate or import commerce, in the territorial possessions or in the District of Columbia, of any medicinal preparation bearing false and fraudulent claims of curative value. The act as originally passed requires the declaration on the label of the presence of alcohol and of certain dangerous or habit-forming drugs, such as acetanilid, cocaine and morphine and their derivatives. Many of the states have enacted similar legislation to prevent intrastate traffic in adulterated and misbranded products that cannot be reached under the federal law.

Since the amendment of the federal food and drugs act, enforced by the Food, Drug and Insecticide Administration of the U. S. Department of Agriculture, government chemists have analyzed thousands of medicines and near medicines, and, based on the results of these analyses, law-enforcement officials have brought about changes in thousands of labels. As a rule, manufacturers have made the necessary alterations as soon as they realized that they were operating in violation of the law. Some, however, loath to relinquish the easy profits to be gained by mulcting the sick and helpless or unwilling to ascertain whether or not their compounds are really capable of doing what is claimed for them, have continued to offer medicinal preparations under gross misrepresentations. Such deliberate or ignorant offenders are subject to the full force of the law. The cases against them are taken into the courts, where judgments are rendered. Each verdict for the government results in penalizing the guilty vender or in the removal of his product from the channels of trade until all false claims are removed from the labels.

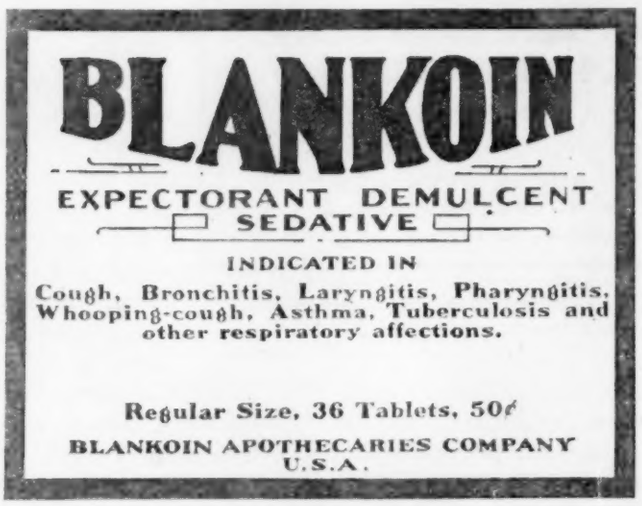
The notices of judgment showing the outcome of cases brought under the sections of the federal food and drugs act pertaining to drugs, several thousand of which have been issued since 1912, give first-hand information about the composition and labeling of a vast number of products designed to do many and varied things to the human constitution. What the government chemists found in their analyses makes interesting reading.

Contents 10 fluid ounces
VEGETABLE SIRUP
WOMAN'S RELIEF
A Purely Vegetable Remedy for all Menstrual Disturbances
CONTAINS 10 PER CENT OF ALCOHOL AS A SOLVENT AND PRESERVATIVE
Recommended for all menstrual irregularities and uterine and ovarian troubles, when not caused by constitutional deformity or that do not require surgical treatment.
Manufactured by
JOHN DOE COMPANY
U.S.A.
Directions
Contents 10 fluid ounces
VEGETABLE SIRUP
Contains 10 per cent alcohol as a solvent and preservative
Manufactured by
JOHN DOE COMPANY
U.S.A.
This is a purely vegetable preparation containing no habit forming drugs.
Directions

Before *After*

They show, among numerous others, the interesting career of a preparation originally containing morphine sold to lull crying babies to sleep. As Royal Baby's Safety, manufactured by the Royal Manufacturing Company, it first came to the government's attention in 1917. Analysis of this "treatment and remedy for colic, wind colic, cholera infantum, teething trouble, cramps of the intestines, vomiting, diarrhea, and diseases of small children" showed that it was a solution containing alcohol, sugar, Rochelle salts, an extract from a laxative plant drug, flavoring material and morphine in the proportion of 1/8 grain per fluid ounce.

Thus this preparation was open to the charge of misbranding on two counts. In the first place the presence of morphine made it distinctly not "safe for babies" and in the second place the ingredients did not constitute an effective remedy for the children's complaints enumerated. The court imposed a fine of $50 and the costs of the proceedings on this manufacturer. But did this deter him? Not at all. A few months later the government inspectors found the erstwhile Royal Baby's Safety being sold under the name of Romko, by a company now called the Baby Safety Company. The new labels gave only the names of the product and manufacturer and the quantity of morphine and alcohol present, but the circular accompanying each bottle held out the promises shown by the government at the trial to be unjustifiable and stated further that the preparation would "soothe crying infants and promote restful sleep." Sleep induced by morphine is scarcely to be recommended for babies in general, and the soothing effects of this drug might dangerously mask the symptoms of some pathologic condition that should be treated promptly. Once more the government went to court, the case this time being brought against the product rather than the producer, with the result that the seventy-two bottles seized by the federal inspectors were judged to be in violation of the law and ordered destroyed by the court. Rather than have his entire output meet the same fate, the manufacturer removed morphine as an ingredient and reduced the claims for his product to "a pleasant preparation for infants and children, intended to assist nature in regulating the bowels."



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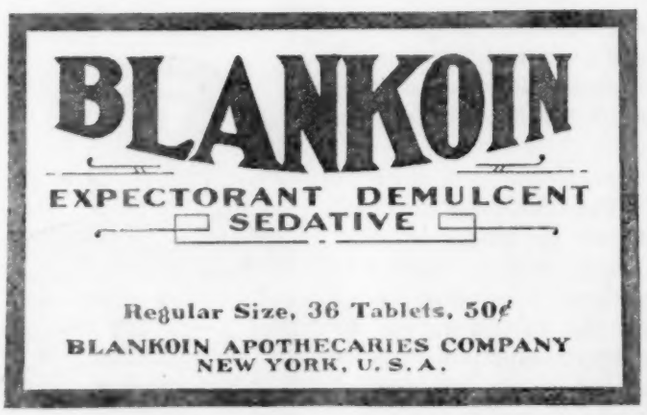


After

The accompanying illustrations showing labels before and after action under the food and drugs act was taken could be multiplied many, many times. They serve to show, however, the general tendency to remove unwarranted therapeutic claims from the labels of medicinal preparations.

In spite of all that has been done by federal and state drug law officials, aided and abetted by the better elements of the trade, the outbreak of any epidemic is still all too likely to serve as an incentive for bringing to the front a formidable array of alleged preventives and cures. This was shown during the influenza epidemic of 1929. As soon as the extent of this epidemic became apparent public health authorities all over the country, who have devoted a great deal of time to a study of this disease, issued warnings that scientific experiments had proved that no one drug or combination of drugs can be relied on to cure or prevent influenza and pointed out that the most effective treatment known is to go to bed as soon as the symptoms indicative of the initial stages of influenza appear. A strict regimen of isolation, rest and proper food and ventilation, said our medical authorities, is the only successful method of coping with influenza yet known.

Flying in the face of these well established facts, certain manufacturers flooded the market with "preventives" or "cures" for influenza, and even went so far as to state that persons showing the first symptoms of the disease might

safely continue at their accustomed duties in office, factory or home, provided they faithfully dosed themselves with the "preventive" or "cure." Failure to pay proper heed to Nature's danger signals might easily result in fatal complications that could have been prevented had proper precautions been taken at the beginning.

The campaign launched by the Food, Drug and Insecticide Administration against this menace to the public health soon convinced those seeking an easy road to wealth of the risks involved in trying to capitalize on a national calamity when the frightened populace was willing to clutch at almost any straw to avert impending disaster. As a result, the representations made for a large array of falsely labeled "cures" and "preventives" underwent a hasty change.

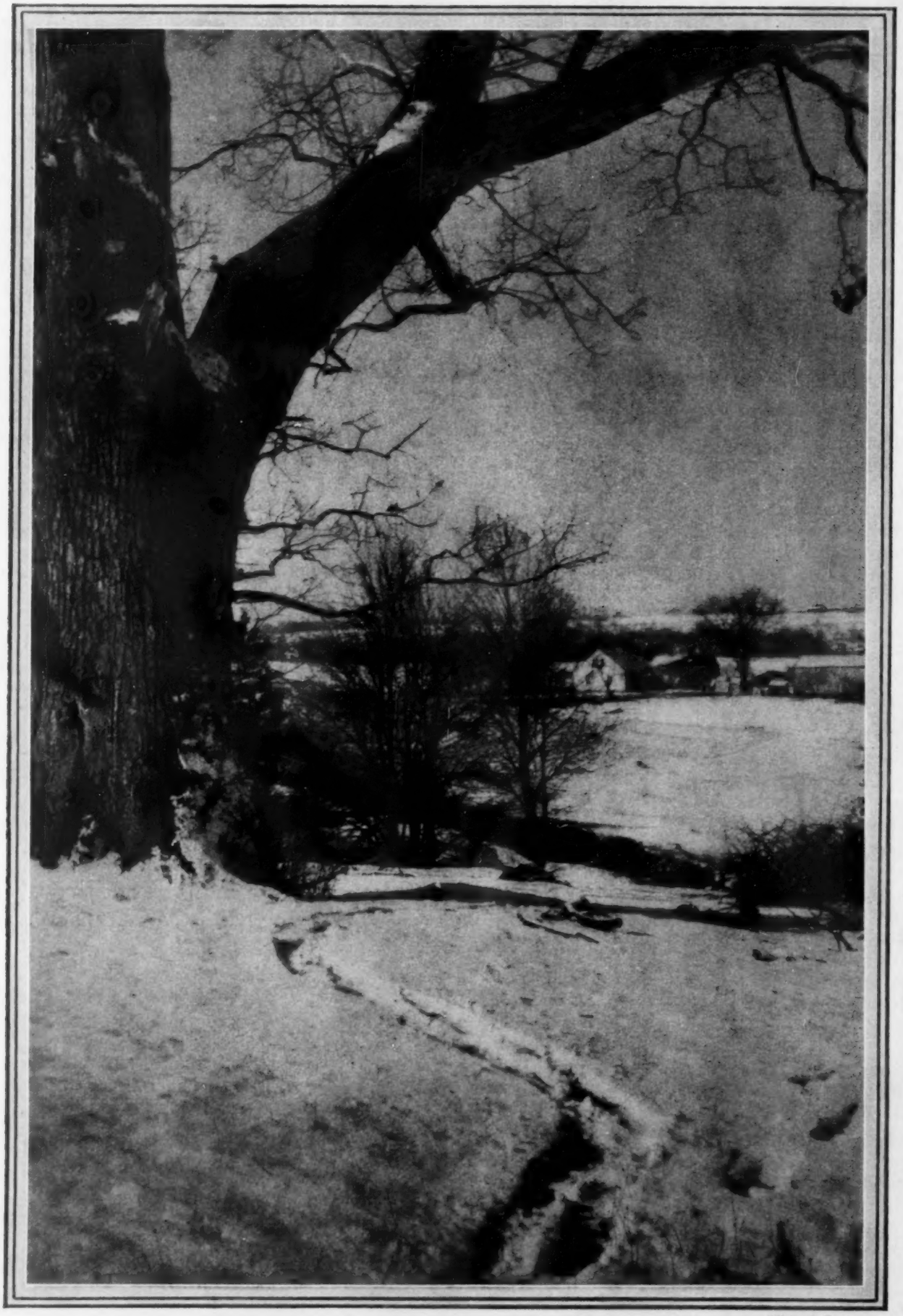
Unfortunately, the federal food and drugs act as it now stands does not cover advertisements of medicinal preparations in papers and magazines. Many of the enormous number of flu "preventives" and "cures," which, along with advertisements for them, were collected by the government inspectors, proved to be within the law so far as their labels were concerned but to be advertised under false statements in certain newspapers and journals, as well as by some radio stations. For example, a neat brown pasteboard box containing tablets was modestly labeled "To Be Used as a Gargle for the Relief of Minor Throat Irritations," whereas the advertisements for the same tablets in the local press ran "Antidote for Colds, Influenza, and Grip." The ingredients which analysis showed made up these pills would be a suitable base for making a gargle but would scarcely be an "antidote for colds, influenza, and grip."

Through cooperation and education, with recourse when necessary to prosecution, the Food, Drug and Insecticide Administration has gone a long way in carrying out the purpose Congress had in mind in amending the food and drugs act in 1912. But it is highly improbable that we shall ever reach the utopian state where all medicinal preparations will be sold only under perfectly justifiable claims. The field for quick and easy gains through fraud is much too fertile to be readily abandoned by unscrupulous dealers in fake remedies. The government must maintain close surveillance over interstate and import shipments of preparations for which curative claims are made if consumers are to be protected against lying labels and scrupulous manufacturers against unfair competition.

Nutty? Yes, But Also Fruity

Behold the jaunty gentleman, the delectable dinosaur and Major Seagrave in his racer. All are easily assembled, given the proper ingredients. They make enticing table decorations for children's parties or holiday meals. And they are delightfully and almost wholly edible.

Photos by Underwood and Underwood



Michael Greenan

Winter peace has settled with the snow on this bit of New England countryside.

The Farm Woman's Leisure

By Lucile W. Reynolds

MOST speakers and writers on the subject of leisure-time activities have concerned themselves chiefly with problems presented by the industrial groups which comparatively recently have acquired considerable leisure. Little or no attention has been given to the problem of leisure for a group representing nearly one third of our total population, the families living on the farms. Can it be that there is no problem here? Or is it rather that it is a different kind of a problem, one that requires a somewhat different approach if it is to be handled intelligently?

The problem of leisure for the farm women of America is of tremendous significance. Here it is not so much "Now that we have it, what shall we do with it?" as "What can we do to promote a standard of living that will ensure some leisure and capacity to use it worthily?"

Perhaps a consideration of the meaning of the word leisure will help to clarify our thinking. George B. Cutten in his admirable book, "The Threat of Leisure," refers to the fact that among the Greeks the word for leisure and that for school was the same, intimating that this was a time for the agreeable task of study, which could be accomplished in a way to derive most benefit from it, without haste or pressure. Frequently today the connotation of leisure seems to be "a chance to do nothing."

But thoughtful persons are considering the qualitative approach to the problem. L. P. Jacks says of leisure that it is not inaction but a higher kind of activity. Another writer puts it thus: "There is no dividing line between what is work and what is leisure. The difference is not in the act but in the motive of the person who performs the act. If a thing is done primarily because one enjoys doing it, then it is recreational in character."

Mrs. Rodenwold in her study of the leisure-time activities of fifty wives of faculty men at Iowa State College has formulated a definition of leisure based on the assumption that housekeeping is the primary business of the housewife. "Leisure for the housewife is that time not taken by the performance of ordinary household duties, by sleeping, eating, and outside work for pay." It is her definition of leisure that is used in this discussion. She has classified the leisure time of the women whose schedules she obtained, as follows:

1. That used in an organized club, church or lodge.
2. That used with informal groups such as the family or personal friends.
3. That used in an individual or personal manner.

Under the latter she has included reading of all kinds; leisure that has to do with the woman's physical well being—the rest hour, the daily walk, gardening, outdoor sports, autoing for pleasure, picnicking; and the activities that serve as a means of self-expression through creating things or through developing some capacity within the homemaker, such as music, art, dramatics, writing and decorative arts of all types.

Mrs. Rodenwold found that the fifty women whom she interviewed had considerable leisure. The average amount that they spent daily in leisure-time activities was 7 hours, 15 minutes; the average amount of time spent daily on ordinary household tasks was 6 hours, 11 minutes; in sleeping and eating, 10 hours; in outside work for pay, 33 minutes. Of the time spent in leisure-time activities, reading consumed more than any other activity—1 hour, 43 minutes a day.

At present I know of no published data from a specific study of the leisure time of farm women. When the complete results of the study made by Miss Kneeland of the use of time of some 2,000 homemakers are published, we shall have some actual facts to present. In the meantime there is sufficient evidence to indicate that emphasis on the worthy use of leisure should have a place of major importance in any program for the education of adults.

We may assume that farm women have more leisure than their grandmothers or great-grandmothers had. No longer do they do their own weaving. In many farm homes butter and cheese are no longer made. Many labor-saving devices have been added. The public utility

companies are rapidly pushing their way into the most rural communities and electricity is supplanting kerosene for lighting. It is also providing the power for cleaning, for laundering, for pumping water into the house, for cooling the refrigerator. And the end is not yet in sight. There are indications that houses as completely equipped with modern conveniences as our city homes will be found in increasing numbers in rural communities.

In many rural homes there is better organization than formerly of the work that is still carried on in the homes. Meals are more intelligently planned and are prepared in a more systematic and time-saving manner. In bringing about these changes, home economics extension services have had a vital part. There is also the growing trend in the farm home toward ready-made clothing. This has resulted in releasing much time formerly spent in sewing. Concomitant with all these changes, the census figures show that the rural family has decreased in size.

How are rural women using the time thus freed? Many of them are devoting more time and energy to the production of goods for sale and thus are contributing to the family income. There is sufficient evidence to indicate that in the future we may expect to find increasing numbers of farm women engaging in activities of this sort. Many women are using some of their leisure in work with organized groups, such as extension units, church societies, parent-teacher associations. No doubt many of them are giving more time to their families, to the training of their children, to self-development.

Is there not a possibility that many of them are devoting far more time than is necessary to the routine work of the household, because in spite of all that modern science has contributed they are still following antiquated, traditional methods in doing their daily tasks? One cannot help but wonder if some of the women who constantly complain that they have no leisure might not perform the essential household duties in less time if they had some consuming interest outside of their daily tasks, some hobbies that they wished to cultivate. Household tasks are lighter if a pleasant afternoon is in prospect.

All of us, I am sure, are agreed that the rural woman needs more leisure. Home economics extension workers have been striving to assist her to secure leisure. Have they used the most effective means to enlist her interest in obtaining it? The usual approach has been to improve her technic in such everyday processes as washing the dishes, planning and preparing the meals, cleaning the house and its furnishings. They have said that these improved methods would save time. Time for what? To use it in other processes about the home, in a more meticulous care of the house, in preparing an ever increasing number of delectable dishes?

May it not be worth while to begin at the other end and help groups of rural women first in formulating standards for leisure and, when this is done, in formulating standards for cleaning, for food preparation, for the physical care of the children that will insure this leisure?

As we all know, life is a question of choices. If farm women decide that they will have an hour a day to read that stimulating new book, to become familiar with a new wild flower or song bird, to play in the yard with the children, to become acquainted with such vital problems as the principles of cooperative marketing, the effect of the tariff on the prices they pay for their shoes, then they may be quite willing to fold the sheets without ironing them, to oil the unfinished floor in the kitchen so the cleaning of it will consume less time, and occasionally to serve the strawberries with cream and sugar and omit the shortcake.

Already home economics extension workers in many states have organized projects in recreation, in music appreciation, in rural dramatics, in farm women's camps. Such projects offer tremendous possibilities for growth for large numbers of rural people. Today some states are making definite plans to launch projects in the use of leisure with emphasis on home reading.

For the larger percentage of our people this method of using leisure yields the largest returns, provided of course that what is read has some value. I do not wish to belittle the place of pageants, of recreation camps, of dramatics. But for the large majority of rural women, such outlets are out of the question. If a taste for good reading is developed, it can be enjoyed by those whose responsibilities prevent their participation in large group activities.

In developing programs for adults, experience indicates that the place to begin is with present interests; in this case this means making use of the available reading material in homes and in community libraries. If the daily paper is found in the majority of homes, the farm women can begin with a critical study of it. What is the editorial policy? Where is the emphasis placed in the news items? Who are the feature writers? What of the wit and humor column? How much space is devoted to Associated Press dispatches? Just what does this mean? Who are the cartoonists? What is their rating? What is the circulation of the paper? How does one interpret the market reports? How much time daily is it worth while to devote to a daily paper?

Surveys indicate that at least one agricultural journal is found in the greater majority of rural homes. If women read these journals they may furnish a fertile field for a critical study. There

Courtesy American Library Association

Bearing books to country dwellers. At the left a county book truck draws up before the post-office at an Alabama mining village. Below, a Pennsylvania farmer's wife selects her fortnight's reading material.

are also the women's magazines. What are the special features? Who are the contributors? Is the information they provide accurate or is there evidence that it is colored by the advertising found in the pages? What of the short stories?

Enough has been said to indicate that the objective here is to develop critical, discriminating judgment of what is read rather than passive acceptance of all that is contained on the printed page. It is to be hoped, of course, that the interests of the women in these home reading groups will expand so that eventually many, instead of the few, will be reading and discussing novels and biographies and essays, that magazines and books on travel and on art, on sociology and economics may be read by them and discussed at their community meetings. The extension of good roads is an important factor in bringing about this desirable end.

A heartening feature in developing projects in the worthy use of leisure through reading is the help that is available from numerous agencies. First is the home economics extension agent. Then there is the American Library Association, which is committed to a program in adult education and which is actively promoting the extension of libraries into rural centers. At the beginning of 1929, 265 out of the 3,000 counties in the United States had made appropriations for library service and there are indications that this number will increase with considerable rapidity. The staffs of these libraries welcome opportunities to assist local leaders and extension agents in any program that will stimulate a discriminating taste for reading.

There is the American Adult Education Association, which is definitely interested in the education of rural adults and which stands ready to advise with leaders in the development of plans for the wise use of leisure. The articles in the first three issues of the *Journal of Adult Education* are rich in the philosophy back of the worthy use of leisure. The teachers in the local high school should be competent to render assistance; the editor of the local paper may have many worth while suggestions. Representatives of the parent-teacher association, of the literature section of the women's club may be able to assist.

Most important of all is the leadership of local farm women. Frequently we find in the community homemakers who formerly taught English or history or civics. Their advice and assistance in outlining these projects, in providing leadership will be invaluable.

Cancer of the Mouth

By

George E. Pfahler

THE cancer problem is one that we must all face and each must do his part in the fight. We do not know how to prevent most cancers, except by keeping all our tissues healthy. Periodic health examination is a step in that direction. No drug, serum or vaccine has been found that can be depended on to cure cancer, but nearly all cancers of the mouth can be prevented, and if treated early, nearly all can be cured.

We should avoid all irritation of the mucous membrane of the mouth, such as is produced by a jagged or sharp edged tooth, by a badly fitting plate or by repeated biting of the tongue. Biting of the tongue is usually caused by a sharp edged tooth. A good dentist will be able to correct these defects. Carrying sharp edged objects in the mouth, such as nails or pins, is bad practice. Older persons are likely to be careless about mouth conditions. We must look after them.

The excessive use of either smoking or chewing tobacco is a common cause of cancer of the mouth and lip. The great majority of cancers of the mouth occur in those who smoke cigars, cigarets or a pipe excessively. Formerly cancers of the mouth occurred much more frequently in men than in women. Now many women are smoking excessively also, and they may develop cancer of this type.

Uncleanliness of the mouth and chronic infection are nearly always associated with cancer of the mouth and are believed to be causes. The mouth must therefore be kept clean, and infection should be eliminated as rapidly as possible. Advice from dentist or physician will be helpful. If all such irritations are avoided or removed, and if syphilis is also avoided, cancer of the mouth will be rare.

Cancer, it is believed, never develops in healthy tissue; therefore, if we keep the tissues of our mouths clean, healthy and free from injury and infection, we need not fear cancer. The conditions that precede or indicate early cancer about the mouth are a pearly, elevated or warty outgrowth on the lip, a fever blister that does not show signs of healing after two weeks, or a persisting crack in the lip or repeated scab formations on the lip. The conditions within the mouth and affecting the tongue, floor of the mouth or cheek that precede or suggest cancer are white patches occurring especially in smokers, an ulcer or any sore that lasts more than two weeks, any local hardness of the tissues or any warty growth. A single, much enlarged or ulcerating tonsil must also suggest cancer.

If any sore or any of the foregoing symptoms persist more than two weeks, we should get expert medical advice from a physician who has had much experience with cancer or we should go to a cancer clinic. We should not apply nitrate of silver or caustics.

In seeking expert medical advice we should avoid getting into the hands of quacks. Some quacks are not even graduates in medicine, but exploit some secret formula for a medicine or a paste which they assert has been handed down to them by some forebear. Those that keep their methods secret are quacks. There are also graduates in medicine who are fully licensed physicians who are quacks, who advertise themselves, their serums, their pastes or their machines. They depend on glib advertisements which sometimes give the impression to the uncritical of being very scientific. Any advertising physician is likely to be a quack. The regular scientific physician depends for his reputation upon patients and he demonstrates his methods and results on them to other physicians with the hope of broadening his field of usefulness. We may lose our money by dealing in worthless stocks, but when we deal with a quack, we are likely to lose our wealth, our health and our life. Most patients who get into the hands of quacks ultimately come to regular physicians but, unfortunately, at a late stage when their chances for recovery are slight.

Cancer of the mouth, if treated skilfully and thoroughly with radium in its earliest stages, can nearly always be cured, with little pain or discomfort. Cancer of the mouth spreads early and rapidly to the glands of the neck. The important thing is not to "get it in the neck," for then the fight is a serious one. In its late stages, cancer of the mouth is a very painful disease and any attempt at treatment will involve surgery as well as irradiation with great mutilation, suffering, and much less chance of cure. The motto should be: Keep your mouth healthy and get the best medical advice possible for any sore lasting more than two weeks.

How Does Your Child *Talk?*

By
Marion L. Dannenberg

There are many schemes through which the child's attention is held while his speech habits are being corrected.

"SAY 'I see,' Johnnie." A teacher in the speech clinic was talking. "Ngke," said Johnnie, making through his nose a sound that lacked entirely the hiss of the s that should rightfully have been uttered through his mouth. As the instructor held the boy's nostrils, he emitted a perfect s, thereby delighting the doctor who was attending the speech clinic.

"Why don't you always advise holding the nose to correct a mispronounced s?" said he. Whereupon the teacher called another youngster who said "the" for "see" and showed that this method did not work at all. The second child had to be taught not to move his tongue but to hiss the letter through his teeth.

In the correction of speech defects every case is individual and deserves individual treatment. What will help one child may be of no use in dealing with another. As a physician should study every patient, so must the speech specialist consider every child.

Types of Defective Speech

Just what do we mean by defective speech? Broadly speaking, it may be divided into two groups: pseudolalia, or false speech; and dyslalia, or speech hesitation, commonly called stuttering or stammering. Pseudolalia is perhaps the more prevalent of the two. Many persons mistake it for baby talk. When the child is young it may even sound attractive and cute. But it is not baby talk. Most likely it will not be outgrown as the child grows older unless some definite efforts are made to check it. Intelligent correction should begin as soon as there is trouble.

The average adult does not know how to show the child the proper movements necessary for correct speech. We may pronounce words accurately and tell the child that he does not do so, yet most of us speak spontaneously without realizing the mechanisms of speech. As a matter of fact, few understand the coordinations required for good speech. These depend not so much on a good mind as on certain faculties of the mind which develop as the child sees, hears and feels.

Brightest Children Often Affected

For example, a child sees a ball. He hears the word "ball." Whether he can say "ball" properly depends on his ability to make the right movements with his breath, voice and articulation. These are called the mechanisms of speech. They are contingent on a speech motor rather than on intelligence. After the child sees the ball and listens to some one say "ball," he develops in his brain an area where he stores away the word. When he sees the object he attempts to give its name. Now if the imitation of what he has heard results in the proper use of the three mechanisms—voice, breath and articulation—he says the word correctly. If, however, the movements are not true, he thinks he has said the word correctly and persists in pronouncing it the wrong way. So are bad habits begun.

Some children have the power of imitation so strongly developed that they readily correct these inaccuracies. But the majority with

speech defects are of the initiative rather than the imitative type. They are usually children of good intelligence, and frequently they come from homes with standards much above the average. Many times they have particularly good vocabularies. It is just because they display initiative rather than the power of imitation that they persist in their bad habits once they have taken hold. For this reason, it is most important that these defects be corrected as soon as they are noticed. As early as possible must such children be taught to substitute the right movements for the wrong.

James is 5, the son of a successful physician and of a mother who devotes considerable thought to his care, mental and physical. He has a younger brother, who presents no difficulty in speaking. Both parents are intelligent and speak clearly. James himself is a bright child, with a sound physical development. Though thin and wiry, he is healthy and active—perhaps too active, although he displays neither nervousness nor timidity. He has much initiative and splendid muscular coordination. He is particularly deft with his hands. Despite a fairly extensive vocabulary for his years, he is not a voluble child, nor does he speak accurately. When he first came for speech lessons, he could not pronounce th, v, r, sn, sw, l or sh properly. His final l's were entirely eliminated. He had to be taught consciously to repeat correct methods of pronunciation and to substitute them for the incorrect sounds that had become a habit with him.

To do this, the teacher must have a clear conception of the movements required for the correct sound and must arouse the interest of the child to develop the proper movements through imitation. Take the word "milk." The articulation of two consonants at the end of the word makes it more difficult to say than at first glance seems likely. Many children say "mik," just as James did. They must be trained, therefore, in the movements required for "m-i-l-k" before they can pronounce it. One simple device that may be used with this end in view is to get a picture of a mill, concentrate on the double l, until the child has "m-i-l-l" thoroughly impressed on his mind, then gradually to add the k sound until he has "m-i-l-l-k," or "milk." He must consciously repeat the lk, and this sound must be continually recalled to his consciousness, so that he does not lapse into his former slovenly habit of speech.

Many are the schemes by which these difficult letters can be simplified and focused on the attention. The important thing is to hold this attention and not to let the child's interest lag. Toys, books, cards, games, shears and paste may all be employed to keep the little minds and fingers busy. But never must the ultimate goal of corrected speech be overlooked by the teacher, though the child himself must not dwell on his defect.

Much that applies to pseudolalia is equally applicable to dyslalia, or speech hesitation. A child stammers or stutters. The parent becomes annoyed and nervous and tells the child to stop; the child becomes conscious of the defect, likewise conscious of himself, and the beginning of a vicious circle is established. The child worries the parent, so the parent frightens the child. If only the words "stammer" and "stutter" could be eliminated from the language! Children with such hesitations of speech should be taught the coordination of language and thought through the medium of voice.

There is Sadye, a girl of 8, big for her age and in splendid physical condition. Her younger brother speaks well. Her parents are cultured, intelligent people, of accurate but rapid speech. Naturally Sadye tries to keep pace with the persons about her. Unfortunately, however, her thoughts come too quickly for the ability of her speech organs. She is of an excitable temperament, a state of psychic activity more than of nervousness. Sadye's father is so concerned about her hesitant speech that he constantly chides her, and thereby develops in Sadye the self-consciousness that it is so important to avoid. Under trained guidance, the child is showing a marked improvement and will doubtless overcome her difficulty.

So, too, with Joe, brought up in an adult environment of precocious speakers. There was never a chance for him to express himself, so to gain attention when several persons were present, he started to draw in his breath and to jump up and down. He was considered naughty and punished. When alone with his mother, he spoke well enough, but when there were others present, he showed signs of dyslalia. But his mother wisely foresaw difficulties, and under direction trained him in voice production and prevented the speech defect from developing. In so doing, she forestalled an inferiority complex, which so often accompanies an eccentricity of speech.

That is why it is so important to prevent speech defects, or if they cannot be entirely prevented, to correct them through psychophysical instruction at the earliest discernible moment. Self-confidence, courage and contentment can never be the lot of a person made shy by faulty talking. He will always have his mind centered on the mechanism of his speech instead of on the thing he would like to say. He will be marked, if ever so slightly, as a being apart from his fellow man. In these days of child psychology, no parent or teacher need allow a boy or girl to grow up with any but the best habits of speech.

"Something I Ate"

By Miles J. Breuer

"I ATE something the other day, and it upset my stomach!" How often the doctor hears this tale! Sometimes it is ice cream or hot-dogs; or it may be some exciting stuff from a delicatessen store or a fruit stand; or something that has stood too long or has been struck by the rays of the moon.

The results that are blamed on the eating of these offending foods are everything from pain in the abdomen on through headache and acute appendicitis to paranoiac insanity. The patient with heart disease or an infected gallbladder insists on dating all his symptoms back to the occasion—let's see, it was the fifteenth of June—when he ate some fish that tasted queer. And the doctor cannot talk him out of it.

Self-diagnosis is usually a risky business; but of all the self-diagnoses based on superstition and imaginative conjecture and leading into a labyrinth of error and tribulation, this bugaboo of illness as a result of "having eaten something" is the most frequently encountered in the doctor's office, and is the most difficult of all misconceptions to clear out of the patient's mind. The stomach, of all the organs in the body, is the most often complained of, and yet it is found least frequently to be the seat of actual disease.

The cause of the terrific pains in the abdomen from which one woman suffered was found to be a blatantly loud radio in the next apartment.

Real stomach disease is far less common than is actually supposed. Some imaginary fault in the food cannot cause stomach disturbance. It must be a real poison or a real infection; and such things are rare in these modern days of sanitary handling of foods and of educated eating. Actual illness due to food is seen by the physician relatively rarely in proportion to other disease conditions.

The stomach is a staunch old friend and stands a great deal of abuse without going back on us. Real stomach disturbances due to injurious foods are so typical that the physician recognizes them promptly; they have characteristics so distinctive that there is little chance of confusion in the medically trained mind. But such disturbances differ vastly and widely from the usual run of so-called "indigestion," "stomach trouble," "ptomaine poisoning" and such disorders commonly supposed to reside in the stomach and to be caused by food.

What happens when a person partakes of some irritating food, spoiled food, poisoned food, or too much food, and makes himself ill thereby? The answer is simple: an effort on the part of the body to get rid of the offending material. There are vomiting and diarrhea, usually ac-

companied by colic and pain. The condition is readily relieved by a purgative, abstinence from food, and rest in bed. In a day or two the person is well again.

If the stomach or bowel disturbance is due to some quality or characteristic of the food, there are always several persons taken ill at the same time; every one who has partaken of the food becomes ill. When several persons at the same time have symptoms it is almost certain proof that the disturbance is due to food.

We do not hear as much about ptomaine poisoning as we used to hear a few years ago. Not long ago, every abdominal disturbance was called that. Ptomaine poisoning is really so rare that most physicians go through a life time of busy practice and never see a genuine case of it.

A person with ptomaine poisoning has paralyses of the muscles of the eyes and inability to move the limbs. It usually kills the patient, and if it does not, it leaves him permanently crippled.

Physicians see many persons who "simply cannot drink milk" because it makes them deathly sick; or who cannot eat eggs or some other article of diet. In 99 per cent of such cases, the trouble is in the imagination of the patient and nowhere else. There are rare cases of sensitization to milk and egg protein; and there are a few foods with definite qualifications for the rôle of upsetting the stomach, like boiled cabbage or chilli con carne, which may possibly serve as culprits in cases of stomach disturbance. But the overwhelming majority of foods as they are given to us by modern distributing and cooking methods never cause stomach disturbance except through the patient's mind. Of course, the latter condition is frequent enough. Many persons actually do get sick when they try to drink milk or eat eggs in compliance with the physician's prescription. It ought to be recognized that this getting sick is a mental matter and is not caused by any effect or property of the milk or eggs. But you can't tell that to the patient himself. He knows you are wrong, for it is very real to him.

He could not see how lung disease could cause stomach pains, so he went on pushing the lawn mower up the terrace when he should have been in bed.

One of the commonest sights in the physician's office is the man who has to be careful as to what he eats. He is wofully thin and wasted; he is weak and nervous; but he is full of enthusiasm in his expert knowledge of what not to eat, which includes everything of nutritive value. He is particularly proud of the fact that he has selected a diet quite without nutritive value, such as bran, broth and coffee. He (and so often, she) is a person who has found that, after eating, he experiences a pain in the region where he supposes the stomach resides. What is more natural than to suppose that it is the food that has caused the pain? When he does not eat, the pain is not felt. Therefore, he starves. Because he has found that foods that require digestive effort are followed by pain, whereas foods that are totally inert and totally valueless to the body, slide out of the stomach without putting it to work and therefore without pain, he is trying to live on things that have about as much food value as straw or sawdust. The thinner he gets the more sensitive he is to the pains, and the less he eats because he fears the pains.

Many of these persons wind up with tuberculosis or some of the conditions that jump on people when they are down. Their only possible cure lies in the eating of plenty of good, nutritious food. Tinkering with one's own diet without medical advice usually leaves a person worse than he was before.

Why then is it, since actual disease of the stomach is so rare, that so many persons are under the firm delusion that they have stomach disorders? Why do they blame it on food? As this attitude is so widespread and firmly rooted, there must be some reason for it.

There is. In fact, there are two of them. The first is the inertia of human conviction. A hundred years ago, food disorders and stomach disorders were indeed common. In the days before refrigerators and sanitation, with lots of alcohol and no knowledge of balanced diets, food disturbances and stomach upsets were not a curiosity. But, tradition persists, even when reality changes. Beliefs without foundation continue to be handed down in everyday life and are difficult to eradicate. Of course the doctors of that day readily recognized these disorders for what they were; but the layman's conception of a stomach disorder is not accurate enough to make the distinction. There is merely a persistence of the vague idea that the eating of food and pains in the stomach are somehow associated with each other.

The other reason is likewise a psychological one. Food is an important thing. It is essential to the maintenance of life. Naturally it is uppermost in the minds of people. There is a vast amount of literature and lecturing on the subject that fairly wrinkles the imagination. If there is pain in the stomach, what is more natural than to blame it on something that has been put into the stomach? It ought to work the same way as sticking a pin into the skin.

While stomach trouble from food, or in fact any stomach disease at all, is relatively rare, nevertheless pain in the region of the stomach is one of the most common complaints of humanity. Few persons have not had it at some time or other, and the proportion of those who suffer with a great deal of it is astonishingly large. However, pain in the region where it is popularly supposed that the stomach resides does not signify stomach disease.

The man who is under business strain and anxiety is often troubled with pains in the upper part of the abdomen.

Pain in the stomach is produced chiefly by the spasmodic contraction of the smooth muscle of the stomach wall, or of the wall of the colon or large bowel. It is the griping or squeezing of these muscles that causes the sensation of pain. But what causes these muscles to go into such painful contractions?

The muscles of the stomach and large intestine are a sensitive indicator of the condition of the entire body. If I were to enumerate all the causes that at some time or other may produce this spasmodic contraction of the stomach and colon muscle, I should simply be naming a list of all the diseases for which sick persons come to physicians. That would not be nearly as illuminating as a few illustrations I can give.

An ordinary severe cold may produce just such pains. They may be so mild as to be evident only as a slight distress, or they may be severe enough to need sedative medicines to quiet them. The bowel contraction may be severe enough to produce a violent diarrhea or mild enough to slow up the movements of the bowel and cause constipation. In such cases, especially if the contractions move backwards, as abnormal ones may do and produce vomiting, thoughtless persons have "intestinal flu." There may be such a condition, but it is difficult to demonstrate.

Not every person with a cold will have gastro-intestinal symptoms. It is only the one with a sensitive sympathetic nervous system who is so affected. The stomach and bowels are under the control of this sympathetic nervous system and respond to every influence that irritates this chain of ganglia along both sides of the spinal column. The sympathetic nervous system is the emergency mechanism of the body; it gets on the job when defense is necessary. Infection, anger, fright, mental strain, pain due to injury, all make it get up on its toes. In persons whose sympathetic systems are quick on the trigger, abdominal pains are one of the by-products.

For a radically different reason, heart disease will cause pains in the stomach, and people with heart disease have to be careful of what they eat. Their stomachs are sensitive, and I have had patients bring me elaborate lists of what they could not eat. As a matter of fact, the thing that counts is the amount of effort required by the stomach to carry the food on through. A dish of oatmeal passes out of the stomach quickly and causes no pain; a pork chop stays there a long time and the stomach has to work hard to get rid of it; before it is out, the patient hears from it. But that does not mean stomach disease; the fault lies with the heart, which is not supplying enough circulatory oxygen to the stomach to enable the latter to do its work.

For still a different reason, food will cause distress in the tall, thin, physically feeble person. This time instead of stomach disease, it is the weight of the food that counts. With all body musculature enfeebled and a poorly supported abdominal wall, a heavy load of food will cause distress in the stomach muscle just as a heavy burden will cause pain in the biceps muscle.

Yesterday I drove down the street and saw one of my patients with chronic stomach pains mowing his lawn. For years he has complained of severe stomach pains. He has been to every doctor in the community, and many of them have told him that his stomach symptoms are due to lung disease and have directed him to rest. That is hard for him to swallow. He cannot see how lung disease can cause stomach pain; therefore he goes on pushing his lawn mower up a terrace when he ought to be in bed. And he keeps on having pains.

Stomach pains due to lung disease operate through the nerves. The nerves belonging to the stomach (pneumogastrics) pass down through the chest, close to the lungs. Irritation of one of these by pressure or inflammation causes the patient to feel the pain in the organ at the end of the nerve, just as the irritation of the cut end of a nerve in an amputated limb

makes an old soldier feel pain in the toe that he has not had for years.

Early in the fall of the year, the business men begin to come into the physician's office to consult him about their stomach trouble. During the summer they have let down a little in their mad race and have gone out for a vacation and relaxed. Now, with September and October, things begin to hum again; problems, meetings, hurried lunches, conferences. The men get under their old tension, and the stomach, sensitive as a needle on a meter, responds. Pains in the stomach region are a common accompaniment of nervous tension and strain in a certain type of human organization; the person who is under pressure, under business strain or anxiety, the person with many worries, or the person who is oversensitive to ordinary strain, is often troubled with pains in the upper part of the abdomen.

Recently I saw a woman who complained of such terrific pains in the abdomen that I had to give her morphine to make existence endurable until I could study out what was the matter. The cause was a blatantly loud, blaring radio in the next apartment, which roared in her ears from morning until midnight. She tried to endure it because no other course was possible. When it became too much, the stomach went on a rampage. But it was not disease of the stomach and was not due to the beans which she called to my attention. For, when we took her out of that apartment her pains subsided without further treatment and she could eat what she pleased.

The causes of stomach trouble may range from mastoid and middle-ear infections in small children, causing vomiting and diarrhea—just think of it, a tiny drop of pus in the ear responsible for all this pain and heaving in organs so far away—to the weak and sagging abdomens of women who have borne many children and whose pain is due to the congestion of the poorly supported organs.

A pain in the region of the stomach means that there is something wrong with the patient somewhere. That is all it means. It is up to the doctor to find out what is the matter; and if he tells you that it is your eyes or your kidneys, do not try to convince him that it was the canned lobster you ate, no telling how many weeks ago. The treatment of stomach disorder is a complex medical problem, involving a thorough knowledge of the functions and disorders of the entire human body. It cannot be cured by tinkering with the diet.

Dusty Industries and Respiratory Diseases

PHYSICAL examinations of prospective employees as a part of the work of a factory employment department is recommended as a means of preventing sickness resulting from certain types of work as well as needless labor turnover, by Dr. L. R. Thompson and Dean K. Brundage, investigators for the U. S. Public Health Service.

Dr. Thompson and Mr. Brundage have recently published in the *Journal of Industrial Hygiene* the results of an exhaustive survey of the effects of exposure to dusts in the Portland cement industry.

Workers in dusty industries are found to be highly susceptible to respiratory diseases, especially infections of the mucous membranes of the nose and the bronchial tubes. The groups of men studied showed that after the first two years, the frequency of attacks decreased until about the eighth year of employment, after which there was a sharp increase. This fluctuation indicates a certain ability of the human system to become temporarily adjusted to environments, in the opinion of the investigators.

Groups of workers who had left the cement industry after less than two years' employment were studied in comparison with those who had remained, with the unexpected result that an exceptionally high rate was found among those who left. Thus it appeared that workers who were highly susceptible and who found they could not tolerate the dusty work tended to leave the industry within two years, leaving a group that was not so easily affected.

The men who had worked in cement dust for eight years or longer experienced more than twice as many disabling cases of respiratory illness per 100 or per 1,000 persons as the group having less than eight years' service, according to the data obtained during the three years of the investigation. Not only did the larger percentage of the seasoned workers have one or more than one illness each year, but the persons who suffered these disabilities had more frequent attacks the longer they stayed in the industry.

It is difficult to escape the conclusion that exposure to too large quantities of calcium dust predisposes men to certain diseases of the respiratory system, the authors declare. They add, however, that such exposure does not appear to predispose to pneumonia or to pulmonary tuberculosis.

Reducing DIETS

By

A. J. Beams
and
E. M. Geraghty

THE fashion dictators of recent years have had enough influence on feminine public opinion to center attention on weight and line. The reducing diet has become a fad and many persons who have reduced unwisely have found impaired health and lowered resistance the price of a pencil-like outline. However, for the few who have reduced unwisely, there are many who have stored up excess fat as a result of overeating. Many of these need a lowered food intake and in reducing are carrying out their doctor's orders. To all persons desiring a change in weight, certain factors should be emphasized.

1. No attempted change in weight, either addition of weight or reduction of weight, should be attempted without consulting a physician.

2. Diet alone should not be used, but a reasonable amount of exercise should be taken.

3. Each person must be put on an individual diet but, generally speaking, weight loss will be achieved by a decrease of from 800 to 1,200 calories from the previous diet.

4. A person on the first week of a reducing diet may show a loss of 3 or 4 pounds, but the amount of decrease should stabilize in about two weeks to not more than 2 pounds per week.

5. In order to be free from too sharp a change, a person should plan a lowered food intake over a period of months.

6. Remember that calories are not the only measuring stick for food.

7. The protein content should not be less than 50 Gm., except in an unusal condition.

8. A pint of milk should be taken daily.

9. Vitamin should be included: vitamin A from whole milk, cream, butter or eggs; and vitamins B and C from fruits and vegetables.

10. There should be sufficient bulk to induce normal bowel action each day.

11. Bread, potatoes and other starchy foods should be kept at a minimum.

12. Butter, cream and other fats should be kept at a minimum.

13. Excess of sugar, jams, jellies and nuts should not be used.

The foods listed in Table 1 are those suggested for the diet. One should not use more than the total caloric value suggested by the physician.

TABLE 1.—*Suggested Foods for a Reducing Diet*

Food	Average Serving	Protein, Gm.	Calories
Whole milk	6 ounces	6	128
Skimmed milk	6 ounces	6	66
Buttermilk	6 ounces	5	62
Beef broth (no fat)	6 ounces	4	15
Chicken broth (no fat)	6 ounces	4	15
Mutton broth (no fat)	6 ounces	4	15
Egg	1 egg	6	78
Butter	1 tablespoonful	..	117
Cream (coffee)	1 tablespoonful	0.5	31
(heavy)	1 tablespoonful	..	52
Apple	1 medium	..	77
Apricots, fresh	3	1	56
Cherries	12	1	41
Grapefruit	½ medium	1	30
Grapes	1 bunch	1	80
Huckleberries	½ cup	1	60
Cantaloup	½ small	1	60
Orange	1 medium	1	40
Orange	1 large	1	60
Peaches	1 medium	1	44
Pears	1 medium	1	44
Pineapple, fresh	1 slice ⅔ inch thick	..	40
Plums, fresh	3 medium	1	84
Raspberries, red	½ cup	..	36
Strawberries	½ cup	1	33
Watermelon	½ slice 1 inch thick	..	40
Asparagus	8 stalks plus ½ teaspoonful butter	1	30
String beans	½ cup plus ½ teaspoonful butter	1	34
Wax beans	½ cup plus ½ teaspoonful butter	1	32
Brussels sprouts	6 plus ½ teaspoonful butter	1	34
Cabbage	½ cup plus ½ teaspoonful butter	1	36
Carrot	½ cup plus ½ teaspoonful butter	1	52
Cauliflower	½ cup plus ½ teaspoonful butter	2	43
Celery	4 pieces 5 inches long	..	8
Mushrooms	1 cup plus 1 teaspoonful butter	5	105
Okra	½ cup plus ½ teaspoonful butter	1	45
Okra with tomatoes	½ cup plus ½ teaspoonful butter	1	44
Onions	1 medium plus ½ teaspoonful butter	1	47
Sauerkraut	½ cup plus ½ teaspoonful butter	1	36
Spinach	½ cup plus ½ teaspoonful butter	2	72
Squash	½ cup plus ½ teaspoonful butter	2	66
Swiss chard	½ cup plus ½ teaspoonful butter	2	37
Tomato			
Fresh	1 medium	1	24
Canned	½ cup plus ½ teaspoonful butter	2	44
Turnip	½ cup plus ½ teaspoonful butter	1	44
Salads (mineral oil mayonnaise or lemon juice or vinegar or mineral oil French dressing)			
Apple	.....	..	64
Apple and orange	.....	1	76
Asparagus	.....	1	15
Cabbage No. 4	.....	2	28
Cabbage and green pepper	.....	1	43
Cold slaw No. 2	.....	1	42
Cucumber	.....	1	18
Cucumber and tomato	.....	2	30
Cucumber and radish	.....	1	20
Endive	.....	..	19
Fruit	.....	2	47
Jellied Waldorf	.....	2	36
Lettuce	.....	..	19
Orange	.....	1	79
Orange and almond	.....	2	97
Perfection	.....	3	18
Romaine	.....	..	21
Tomato	.....	1	22
Tomato and chives	.....	1	27
Tomato and cucumber	.....	2	30
Vegetable	.....	2	51
Waldorf (no nuts)	.....	1	31
Watercress	.....	..	19
Watercress and orange	.....	1	79
Mineral oil mayonnaise	1 tablespoonful	..	2
Mineral oil French dressing	1 tablespoonful	..	...
Roast beef	2 ounces	12	190
Roast lamb	4 ounces	28	256
Roast veal	Average serving	20	170
Roast chicken	4 ounces	23	268
Chicken salad (mineral oil mayonnaise)	1 serving	12	137
Roast ham (lean)	2 ounces	12	165
Fish (fresh)	Average serving	12	138
Cheese, cottage	2 tablespoonfuls	6	28
Other foods used to balance up the menus:			
Thin tomato soup	1 cup	4	37
Entire wheat bread	Thin slice	1	32
Bran roll	1	5	88
Cornflakes	½ cup	1	44
Puffed rice	½ cup	1	26
Krumbled bran	½ cup	3	106
Muffet	1	3	84
Puffed wheat	½ cup	1	24
Triscuit	1	1	29
Fruit gelatin	4 ounces	4	159
Lemon ice	Average serving	..	244
Orange ice No. 2	Average serving	..	263
Applesnow	Average serving	2	73
Loganberry pie	Average serving	..	152
Apple sauce	Average serving	..	107
Mint ice	Average serving	..	241
Ice cream	Average serving	3	247
Stewed prunes	6	1	140
Peas	½ cup plus ½ teaspoonful butter	4	72
American cheese	1 1-inch cube	6	87
Philadelphia cream cheese	½ cake	2	248
Sugar	1 teaspoonful	..	20

None of the foods in table 1 should be fried. One should use only enough fat to make the food acceptable. Small servings of meats, fish, eggs and cheese and larger amounts of vegetables and fruits are recommended. One should not use fruit juices; sugar should be used in moderation. With the average serving of one half cup of vegetables, the allowance is ½ teaspoonful of butter.

With these factors in mind, menus are made up for each individual. There are presented seven menus with recipes showing the make-up of some of the dishes and giving the amounts of servings, grams of protein, fat and carbohydrate, and total calories. The caloric range in these suggested menus is wide, from 1,076 to

(Continued on page 162.)

SIMPLE LESSONS *in* *Human Anatomy*

By B. C. H. Harvey

Lesson XI

CIRCULATORY APPARATUS (Cont.)

ONLY in the capillaries is exchange between the blood and tissue fluids possible. This is the essential service of the whole circulatory apparatus. The capillaries altogether are more than 100,000 miles long and have more than an acre of surface. This exchange is possible because of the incredible thinness of the walls of the capillaries. Some of the thinnest things yet made by man are the lines on Michelson's interferometer gratings. There are 25,000 to the inch. The capillary walls are thinner than one of those lines. It would take 30,000 of them to make an inch, and they are not lines but membranes—tube walls, made of living cells.

In the continuity of this delicate wall there is no interruption. The whole circulatory system is one continuous tube, branching repeatedly and with the finer branches communicating. In all the finest branches, the capillaries, the thin wall is naked, being exposed directly to the tissue fluids. But in all except the finest branches, coverings are added by the mesoderm. The continuous thin tube is there, but in these larger vessels it is only an inner tube. In the embryo it is the only wall any blood vessel has. Outer layers are added later over all the wider parts of the tube. These outer layers supply the machinery which makes the blood move to and through and from the capillaries. Their addition makes in one place a heart, in other places the conducting arteries and veins. The tissues added are muscle tissue, white fibers of connective tissue and elastic fibers.

The minute uncovered capillaries are in all parts of the body. The larger vessels connect with all the capillaries, and they run throughout the length of the body. They have a common center, the heart: they are usually in pairs, one vessel going away from the heart, the other returning to it, as illustrated in figure 108 on the next page.

The position of the heart in the thorax is shown in figure 106. The breast bone in front of it and the vertebral column behind it protect the heart. On each side of the heart are the lungs. They are accommodating neighbors, such as are needed by a restless organ. They allow it to expand and contract as it beats, giving it an air cushion on each side which permits the utmost freedom for that kind of movement. The heart has an apex directed downward and to the left, and a base directed to the right and upward. All the vessels and nerves enter or leave at the base.

Two great arteries leave the heart—the aorta and the pulmonary artery (fig. 107). Two great veins come to it along the right margin—the superior vena cava above (fig. 107), and the inferior vena cava below and somewhat behind (fig. 108). They bring blood from all the body except the lungs. Four other large veins (not illustrated) enter the base of the heart from behind and above; they come only from the lungs (fig. 100, January number).

The heart is the motor that drives the blood through all the circulatory system and keeps it on its ceaseless round. Its cavities expand and then suddenly contract. The extent of the movement is shown by the dotted line in figure 109. When it expands it receives blood from the six veins. When it contracts it forces blood into the two

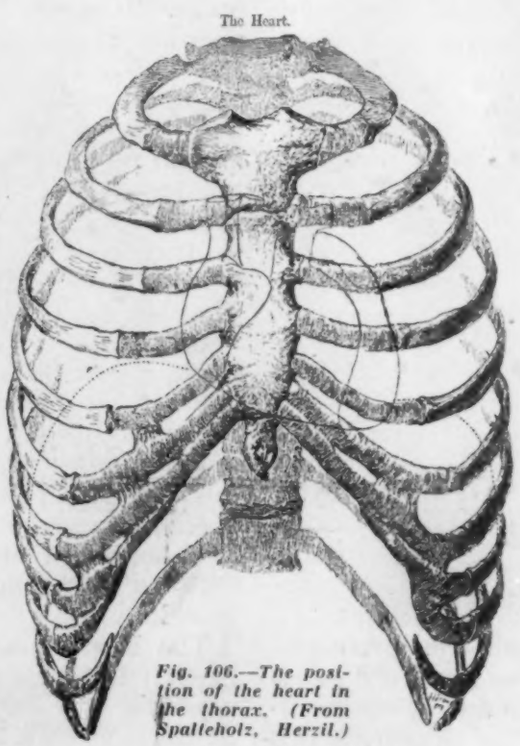


Fig. 106.—The position of the heart in the thorax. (From Spalteholz, Herzil.)

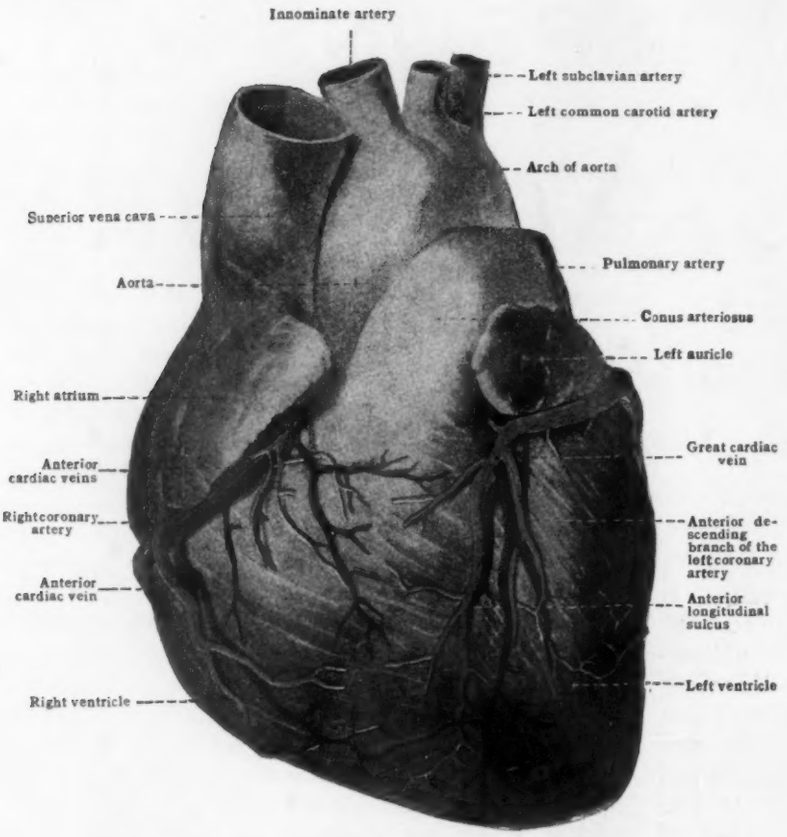


Fig. 107.—The heart seen from the front, with the superior vena cava, the aorta and the pulmonary artery. Arteries and veins supplying the heart muscle are shown. (From Morris' Human Anatomy, Blakiston.)

Fig. 108.—The great arteries and veins of the trunk. (Modified from Morris' Human Anatomy, Blakiston.)

arteries. Valves permit flow in one direction only. With each contraction the heart forces out 5 ounces of blood, 2½ ounces into the pulmonary artery and 2½ ounces into the aorta. It does this seventy times a minute, day and night for seventy years. In one beat it forces out 5 ounces, in one minute 350 ounces, or 22 pints, in one hour 1,300 pints, and in one day about 4,000 gallons. It drives out the blood with enough force to overcome all resistance—air pressure, muscle pressure, gravity, friction of the walls in more than 100,000 miles of capillaries, arteries and veins.

The work done by the heart is enormous. In a day spent lying in bed the heart does enough work to carry a man weighing 150 pounds up a hill 500 feet high. It adjusts its effort to the needs of the body. During an athletic contest it meets the demand of the muscles for blood by working three and a half times as hard for short periods. In a day of moderate activity its work is enough to lift a man 1,000 feet.

The average human heart is 5 inches long, 3½ inches wide and 2½ inches thick. It weighs 11 ounces. It is inclosed in a tough, fibrous bag, the pericardium, which prevents overdistention. Between the heart and this bag is a little lubricating fluid, which reduces friction in its movements. The heart contains four chambers, two receiving chambers above, called the right atrium and the left atrium, and two discharging chambers below, the right and left ventricles.

The left atrium receives blood only from the lungs. It opens into the left ventricle. The opening is guarded by the great mitral valve (fig. 110). The left ventricle forces blood into the aorta and so through all the arteries of the body except those of the lungs. The right atrium receives blood from all the body except the lungs. It opens into the right ventricle, through the great tricuspid valve. The right ventricle forces blood through the lungs only, whence the blood is returned to the left atrium. The two cavities on the right side do not communicate directly with those on the left side. Each of the four cavities contains, when the heart is not contracted, 2½ ounces of blood.

The lining of each cavity is a delicate layer of cells, like those of the capillary walls. This lining is part of the continuous inner tube that extends throughout the system of blood vessels. It extends out over the valves, covering them. Outside the lining is the outer layer, the heart muscle.

The heart muscle does all the work of the heart. It forms a thick layer around the left ventricle (fig. 109) and a layer only one fourth as thick around the right ventricle. Much less

force is required to drive the blood through the lungs and back than is required to drive it through all the rest of the body. The muscular wall of each atrium is thin, and it forces the blood only into the corresponding ventricle. The heart muscle is striped, for it must contract quickly, but it is not as rapid in action as the ordinary skeletal muscle. Its contraction takes three times as long. It contracts rhythmically of itself, though its activity is influenced and regulated by nerves.

Bits of heart muscle will live and grow in a glass dish in an incubator in a proper fluid. As long as they are alive, they contract rhythmically without any nerves.

The muscle fibers are branched and the branches join other fibers, so all the muscle fibers of the right ventricle are united into one connected mass. This mass is continuous with the muscle of the left ventricle. Similarly the muscle of the right atrium is continuous with the muscle of the left atrium. The muscle of the two atria is separate from the common muscle mass of the two ventricles, but they must cooperate perfectly in each heart beat.

Fig. 109.—Section through the mitral valve, showing the cords that prevent the flaps from being reversed under pressure. It also shows the great thickness of the muscular wall of the left ventricle. (From Spalteholz.)

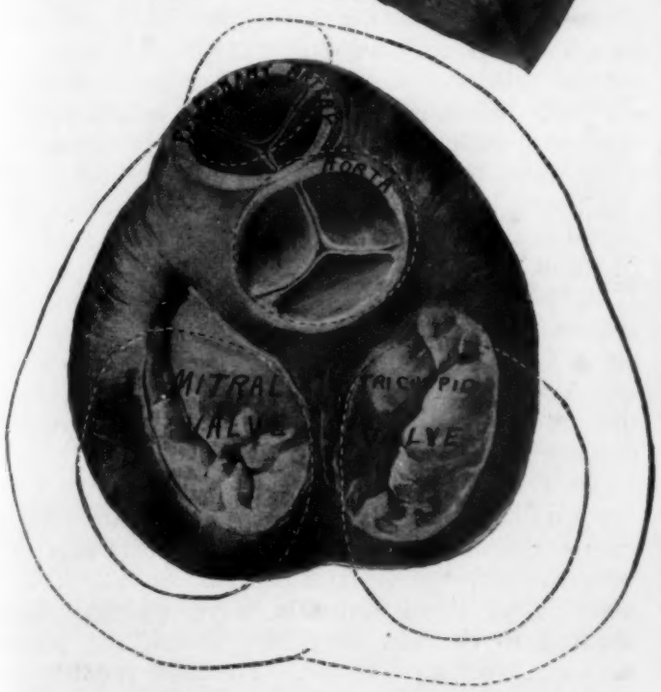


Fig. 110.—The four valves of the heart when it is in a state of contraction. The two arterial valves appear above. The two larger valves between the atrium and ventricle are shown below, one on each side. The size of the heart when distended and of the opening which the valves must stop is indicated by the dotted lines. (From Spalteholz.)

This is secured through the famous bundle of His, a wonderful mechanism. The commencement of contraction of heart muscle in each beat is high up on the atrium near the point at which the veins enter. A wave of contraction moves from there down toward the opening into the ventricle. This forces the blood to fill and distend the ventricle. Now if there were direct continuity between the atrial muscle and that of the ventricle, the latter would begin to contract at the upper end and the contraction wave would move thence toward the lower end, forcing the blood that way. The consequence would be disastrous, for the opening out of each ventricle is at the upper end—the pulmonary artery and aorta. The pressure in the left ventricle during contraction amounts to nearly 4 pounds per square inch, so it must be directed toward an outlet. Really the ventricle must contract all over at once. The bundle of His secures this.

The bundle of His is a cord of embryonic muscle tissue along which the contraction wave moves rapidly. Its upper end is on the lower part of the partition wall between the two atria, and it passes down onto the wall between the two ventricles. It forks, one part going to each ventricle, and it spreads widely over the inner surface of the ventricular muscle. So at the end of the contraction of the auricles

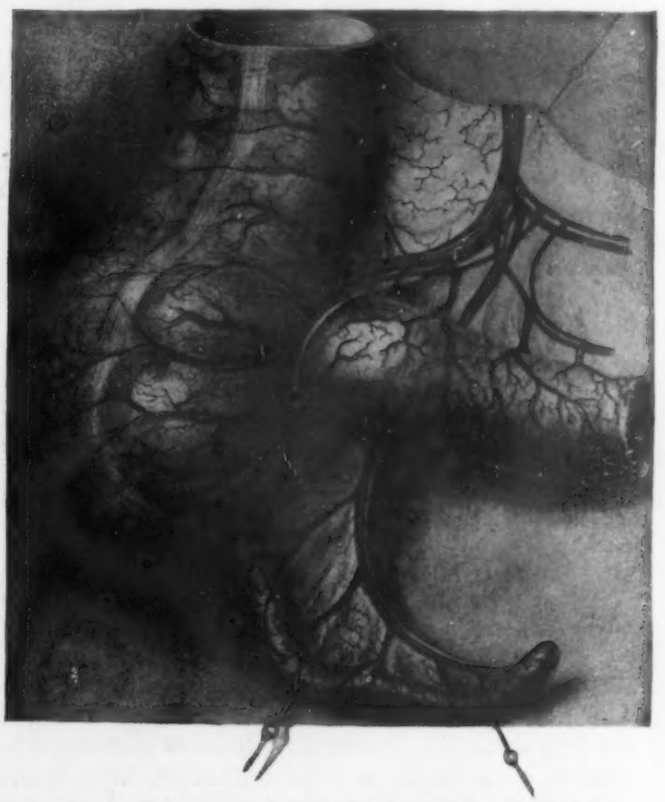


Fig. 111.—Arteries and veins of the small and large intestine near their junction. (From Morris' Human Anatomy, Blakiston.)

when the ventricles are full of blood, this band stimulates the ventricular muscle to contract everywhere at once.

The enormous pressure so produced closes the great valves to the atria and opens those into the aorta and pulmonary arteries, and each ventricle suddenly discharges its blood, contributing its high pressure to the pressure in the artery. The contraction of the ventricular muscle lasts only 3/10 of a second. When it ceases, pressure in the ventricle ceases. The valves in the great arteries close suddenly, and the ventricle begins to fill again with blood.

It is easy to hear the valves work. Any one listening carefully over the base of the heart can hear the valves close—lub-dup, lub-dup, lub-dup. The first sound is made by the closing of the great valves between atrium and ventricle, the second by the valves in the two great arteries closing simultaneously.

The arterial valves (fig. 110, above) are each made of three pockets. The flaps support one another and they can withstand a pressure of more than 4 pounds to the inch. Their task is easy in comparison with that of the larger valves, for the bases of these arterial valves are attached to firm, fibrous rings, which do not change in size. The great atrio-ventricular valves, however (fig. 110, below), must close enormous openings changing in size and pressure seventy times a minute. They would seem to be in much greater danger of being reversed by the pressure.

A beautiful mechanism makes them secure. Many strong tendinous cords are attached to each flap, or cusp, on the side exposed to pressure. These come from the ends of great finger-like muscle processes which project from the muscular wall into the cavity of the ventricle. When the general musculature contracts, raising the pressure and threatening to reverse the valve flaps, these finger-like processes also contract and pull on all the cords holding the flaps with correspondingly greater firmness.

It is an interesting fact that the heart beat is usually faster the smaller the animal. The number of beats per minute in the elephant is 27, horse 44, man 70, woman 75, dog 110, rabbit 150, mouse 700. In man the rate per minute is at birth 140, infant 120, child 100, youth 90 and adult 70.

The Supply Tubes, or Arteries

All parts of the circulatory tube carrying blood from the heart to the capillaries are called arteries. Two large ones leave the heart, the pulmonary artery and the aorta (fig. 107). The first goes only to the lungs. The aorta is the largest artery, being 1 inch in diameter. The system of arteries is like a tree of which the aorta is the trunk. Each terminal twig connects with a capillary network. These twigs are about 1/2,500 inch in diameter (fig. 111). They differ from tree twigs, in that they are connected by cross twigs, as are also most of the smaller branches. The continuous, delicate inner tube is covered in arteries by outer coats of elastic fibers, white connective tissue fibers and muscle fibers (fig. 112). The elastic fibers are to withstand the pressure, the white fibers to give strength and prevent overdistention, the muscle fibers to regulate the size of the artery and so the amount of blood supplied to the part served by it.

The pressure in arteries is very high, nearly 4 pounds to the square inch in the aorta. This pressure is nearly three times that in the steam heating pipes of most office buildings and about one fifth of that in the water pipes of Chicago, for example. It diminishes steadily as the blood goes through the arterial tree to a little more than 1 pound in the terminal twigs and from 6 to 7 ounces in the capillaries. Continuous high pressure, or tension, is usually met in the body by formation of elastic tissue; there is a great deal of this in the arteries (fig. 8), so much that it forms elastic membranes. Its presence makes the blood flow steadily in the capillaries instead of in jumps corresponding with each stroke of the heart beat. Because the elastic walls of arteries are thus continually stretched during life, the aorta shortens 30 per cent of its length when released.

The white fibers give the arteries the necessary strength. It requires a pressure of more than 100 pounds per square inch to make them burst, when healthy and young. The muscle fibers are placed circularly around the arteries. They are abundant on the smaller ones and can by their contraction act like stopcocks, shutting off the flow almost entirely. This is a valuable service. When a part is at rest, its arteries contract and little blood goes to it. Active muscles have more than five times as much blood passing through them as resting muscles. Thus the blood is shunted to the busy parts of the body—brain or stomach or muscles as the case may be. It is better to be still for a while after dinner; severe mental or muscular effort is best made on a fairly empty stomach. These muscular stopcocks or regulators are under the control of the autonomic nervous system and adjustments are made without our consciousness.

After death, the muscles of the arteries live for a time, and with the help of the elastic tissue they force most of the blood out of the arteries into the capillaries and veins. So when the arteries of dead animals were opened they seemed to contain only air; hence the name "arteria," or air carrier. The old mistake is perpetuated in the name.

The arteries to different parts of the body vary in size, because some parts require much more blood than others; thus the amount of

blood needed per minute per pound of weight is on an average for the leg ⅘ ounce, the skeletal muscles 2 ounces, stomach 3 ounces, intestine 5 ounces, brain 20 ounces, kidney 22 ounces, thyroid gland 22 ounces, cortex of suprarenal gland 100 ounces. It will be noted that the last four need more than their own weight of blood every minute. Their arteries are correspondingly large.

The arteries are distinguished in life by the pulse. This corresponds in frequency with the beat of the heart, but is not due to movement of the blood. The pulse travels along arteries about 10 yards per second, and the blood less than 1 foot per second, slowing down toward the terminal twigs till in the capillaries it flows only about 1 inch in thirty-six seconds. The pulse is lost in the capillaries. There is none in the veins.

In their course through the limbs the arteries always occupy the best protected positions, where they are least susceptible to injury. A wound of any large artery is likely to cause an animal to bleed to death in a few minutes. It is much more dangerous to the animal than a wound of a nerve or a vein or any other structure.

It will be noted from figure 108 that the aorta, where it leaves the heart, goes up toward the head a little way and then curves back. It does that in all vertebrates, but the arrangement is useful only in fishes. They have no lungs, and so the fish's heart has only two chambers. The right ventricle and the left atrium, which belong to the pulmonary circulation, would be useless. The fish's aorta carries the blood to the gills to get oxygen and thence throughout the body. Higher vertebrates have lost their gills, but the aorta still goes toward the place where they were, carrying forward all the blood for the abdomen and legs before turning back. It might almost be said to be looking for the lost gills.

The Return Tubes, or Veins

All the parts of the circulatory tube carrying blood from the capillaries toward the heart are called veins. The pulmonary veins carry blood only from the lung capillaries to the left atrium. The veins of all the rest of the body, except the heart itself, constitute the general venous system. It is like a curious tree with two trunks, called the superior and the inferior vena cava. Both empty into the right atrium (fig. 100, January number), but there is only one set of branches. They are freely connected by cross branches and twigs (fig. 111). Each terminal twig drains a capillary network.

The continuous, delicate inner tube is covered in veins, as in arteries, by outer coats of elastic fibers, white fibers and muscle. But these outer coats are much thinner and weaker than in arteries. That is because the veins have so little pressure in them—only about one tenth of the pressure in the corresponding arteries in the limbs; in the abdomen the pressure in the inferior vena cava is less than 1 ounce per square inch, and in the thorax the pressure in the superior vena cava is less than nothing during inspiration; that is, there is suction in it. The same is true of the great veins at the root of the neck. The muscle tissue in the walls of veins serves to regulate their size just as in arteries. If they were all distended they would hold all the blood in the body.

The pressure in the veins is hardly enough to cause a continuous flow of blood toward the heart. That flow is assisted by the suction into the thorax in inspiration of all fluids that can get in—of air down the trachea and of blood through the veins, thus providing a reservoir in the great veins from which the right atrium is filled.

The flow is assisted by another mechanism which is especially necessary in man—the action of the valves. The medium sized veins, between 1/12 inch and ½ inch, usually possess valves. They resemble in shape the valves at the roots of the aorta, but they have only two pockets and the smaller ones only one. Any movement of a part of a muscle, any contact of the body with an outside thing makes pressure on some veins. Such pressure makes the blood flow toward the heart, for the valves permit flow only in that direction.

In fishes the heart is placed in almost the lowest part of the body and gravity takes care of the return circulation. In land animals the heart is placed also in the lowest part of the trunk, but in those with long legs the return circulation from the feet presents mechanical difficulty. Man has adopted the upright position on two legs. In doing so he has lifted his heart to a greater height above the lowest part of his body than any other animal except the giraffe and elephant. Therefore the return circulation from the feet is especially difficult; in the legs it depends a great deal on outside help from muscular movement, and valves are especially abundant in leg veins. In old age, valves are likely to become incompetent and so dilated varicose veins are especially common in the legs of old persons.

Muscular movement, when intermittent, helps the venous return, but when many of the muscles of a limb act continuously for several minutes, the pressure inside the deep fascia is great enough to flatten out the deep veins entirely. Under those conditions the blood passes out to the surface below the obstruction. There are free communications between the deep and superficial veins opposite the joints. That is why we have very large veins just under the skin in upper and lower limbs.

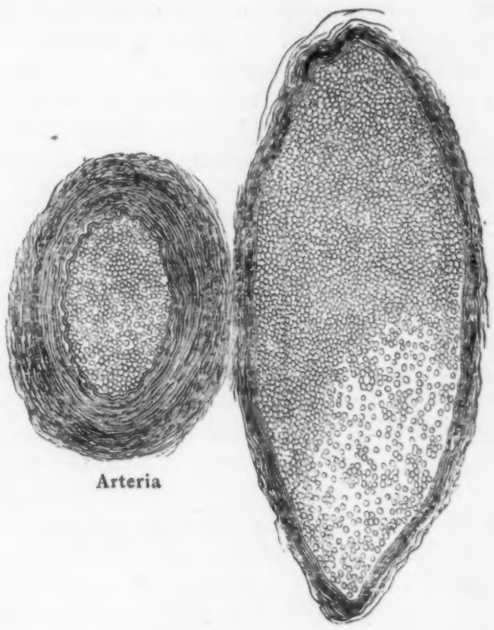


Fig. 112.—Section through an artery and the corresponding vein, magnified sixty diameters. (From Toldt, Human Anatomy, Macmillan.)

Fig. 114.—Lymph vessels of the hand and arm. (From Toldt.)

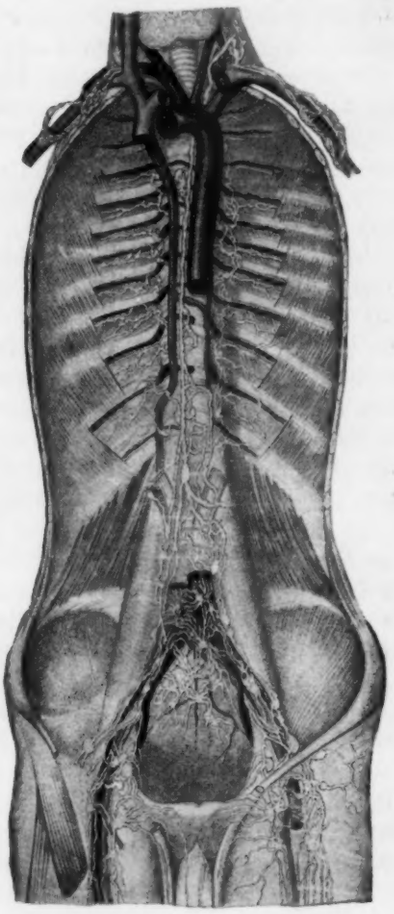


Fig. 113.—The lymphatic vessels that empty into the veins at the root of the neck on the left side. Others empty into the veins on the right side. (From Toldt, Human Anatomy, Macmillan.)

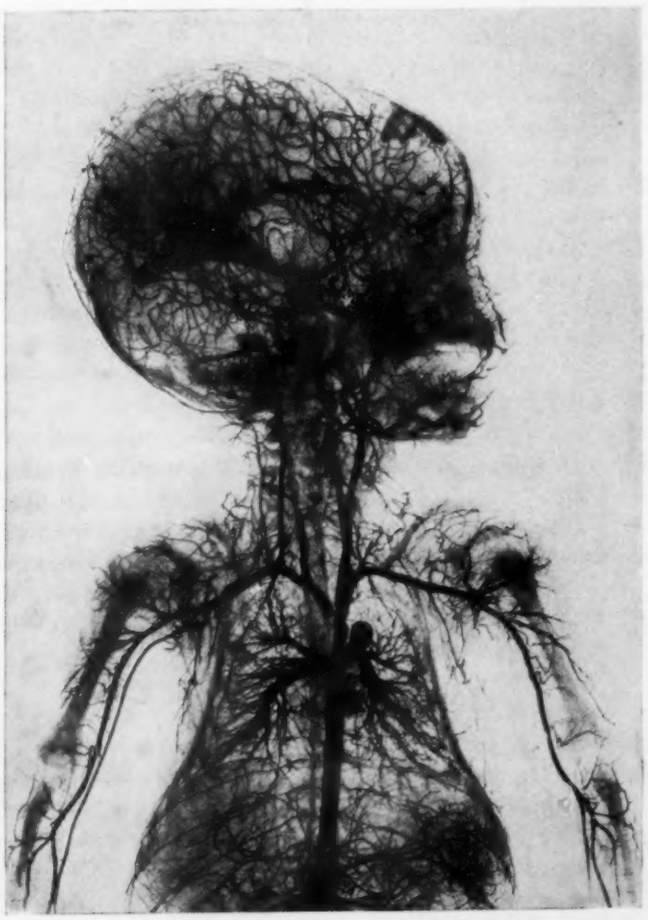


Fig. 115.—X-ray photograph showing the vessels of the upper half of a child's body. (From Orrin, William Wood and Company.)

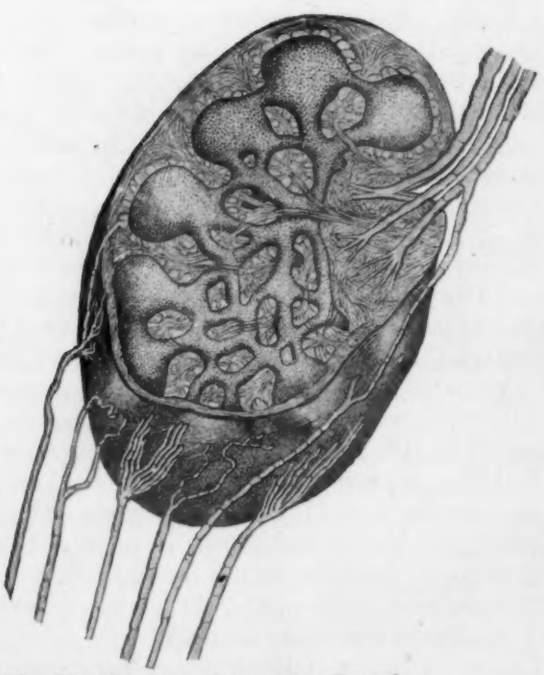


Fig. 116.—Diagram of a section through a lymph gland. (From Toldt.)

The blood moves through the veins slowly, about 1 foot in three and one-half seconds. This is ten times faster than in the capillaries, because the area of the veins is much smaller than that of the capillaries. A complete round of the circulatory apparatus is made by the blood in about twenty-seven heart beats, or twenty-two seconds. In this complete round the blood gets oxygen from the lungs, food from the intestine, and warmth from the muscles; it gives them up everywhere as needed. It gets carbon dioxide in the tissues and gives it up in the lungs. The whole system is a hot water heating plant for the entire body.

It is just three centuries since William Harvey, a London doctor, demonstrated to the world the circulation of the blood. Up to that time the essential part of the circulatory apparatus, the capillary network, was unknown and undreamed of. Harvey did not know it. It is interesting to see what his predecessors made of the apparatus as a whole in ignorance of the part (the capillaries) to which all the rest is accessory. The existence of the heart, the arterial tree and the venous tree had been known for 2,000 years, but only by superficial observation. Because it was known that arteries and veins both contained blood, it was concluded that blood ebbed and flowed like their breath. For century after century this fundamental mistake was made. It was not certainly known that the heart was a muscle.

Harvey measured the output at each beat and tested the valves at the roots of the two great arteries and in the veins experimentally. The blood, he found, does not ebb and flow; the valves show that it goes away in the arteries and that it comes back in the veins. Harvey could not see how the blood passes across from arteries to veins, but by accurate measurements and reasoning he convinced his age that the blood does pass across and that there is a circulation.

In the year Harvey published his book there was born near Bologna an Italian boy, Marcello Malpighi. He learned of Harvey's work and sought to carry it on. He got a newly invented microscope and, in 1661, he saw the capillaries and the blood moving in them in a frog's lung.

In a few days after a bruise has been received, the swelling and discoloration disappear. The dead tissue cells and the red blood cells that get out of broken capillaries are removed. The area is policed and cleaned up by the scavenger cells, which are everywhere present in connective tissue. These cells eat up the débris, as well as dirt or bacteria that get in through wounds. Then they carry away their load. By what channels?

The scavenger cells cannot get into the blood vessels. Even if there were a hole in the blood vessel, the blood would be flowing out because of the pressure. They can move but they are sluggish, and they cannot swim against the stream. They would have about as much chance to get into a blood vessel as a butterfly would have to get into a hole in the garden hose while the water is turned on. They travel by a special set of channels, the lymphatic vessels, which are present in addition to the blood vessels in nearly every part of the body, especially where slight injuries and slight wounds are frequent, as on the palms and soles.

These channels begin as capillary networks (fig. 114). From them vessels something like delicate white veins lead toward the root of the neck. All the lymph vessels terminate there (fig. 113), at that point emptying into the veins.

The lymph capillaries are irregular in size and are usually larger than blood capillaries. They pass into lymph vessels, which have many valves. The blood capillaries are fed by arteries, but the lymph capillaries are not; no other vessels give them any fluid. They take it up from the tissue spaces. The cells of their walls are alive, and they take up fluid from the outside and give it up to the inside of the capillary. They do this even with force; that is one of the factors that makes the lymph flow. The scavenger cells crawl into them with ease, making their way between the wall cells. Such flow of fluid as there is helps them.

Along the lymph vessels are lymph glands. Some are shown just above the elbow in figure 114. Every lymph vessel passes through a lymph gland somewhere. These glands are spongelike filters (fig. 116). Many vessels enter all round their surface, but only one or two leave. In the interior the lymph seeps through a close spongework which surrounds masses of growing white cells. As these growing white cells mature, they wander into the stream, so the lymph vessels at the root of the neck are full of them. At the root of the neck the lymphatic vessels have joined into a right trunk often double, and a larger left one called the thoracic duct. Each empties into a vein, and the opening is guarded by a valve. These great veins have a negative pressure, or suction, in them during inspiration, and so the lymph with its new white cells is poured into the blood vessels with each breath.

Because of the abundant valves that permit flow only toward these terminations, every movement of the body helps the lymphatic circulation.

In all animals that breathe, there is, therefore, a way by which cells and solid substances can get into the blood vessels notwithstanding the blood pressure. In fishes, which do not breathe but have gills, the lymph is forced into veins by the contraction of special pumps, or lymph hearts, placed on the lymph vessels just before they enter the veins.

HYGEIA
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Plain Facts about Health and Disease

UNDULANT FEVER

IN 1859, a British physician named Marston wrote a description of a disease that had occurred among British soldiers in the Crimean war. He called it Mediterranean, or gastric remittent, fever. The disease resembled typhoid fever somewhat in its symptoms. In 1886, the famous British bacteriologist Bruce found the germ that causes the disease in the spleen of those suffering with it. This organism is now known as the *Micrococcus melitensis,* or small round germ of Malta fever, and also as *Brucella melitensis,* a name that commemorates the name of its discoverer.

Investigations made since that date by a variety of scientists who have studied Malta fever as it occurred among British soldiers in Malta indicate that the men became infected from drinking the milk of goats that were infected. In 1906, an order was issued forbidding the drinking of the milk of goats unless it had been boiled, and immediately the number of cases decreased to a few.

The first symptoms of this disease in man are tiredness, headaches, aching of the bones and loss of appetite, followed by thirst, constipation and nausea. There are periods of fever during the middle of the day and these may last for from five weeks to a year or more. The fever may come and go for various periods of time. Because of the fever, the wasting, the perspiration and the other symptoms that have been mentioned this disease has been confused with tuberculosis, with typhoid fever, with heart disease and with various other complaints.

Now a disease that affects chiefly British soldiers in the Mediterranean area would not seem especially to be a subject of interest to American readers. As has been emphasized previously in these columns, however, the germ causes of disease are living and they undergo changes in their lives and habits as do living men. Germs become more or less virulent under various circumstances. Germs that have lived wholly among animals suddenly adapt themselves to man, and vice versa. Today there are numerous cases of undulant fever in the United States and the bacteriologists and the physicians are racking their brains and poring over their microscopes trying to find out whether the disease is increasing rapidly or whether the cases now being discovered are cases that were formerly overlooked. Moreover, a connection has been traced between undulant fever as it affects man and a condition known as contagious abortion of cattle, which complicates the situation still further. Whereas it was formerly thought that the condition could be caught by a human being only through drinking the milk of an infected goat it is now realized that there are other sources of contamination.

Among goats, cattle, sheep, swine, mules, horses, dogs, cats, rabbits, guinea-pigs, rats, mice and even fowls, there may occur an infection with a germ much like the germ that causes undulant fever. The bacteriologists show by certain specific tests that these germs belong to the same family as the undulant fever germ. The disease spreads insidiously among these animals and causes the female to lose her young long before the time of birth. This germ is called *Brucella abortus.* The udder of the cow may become infected and its milk contaminated with the germs. When the human being drinks the milk of the infected cow he may become infected, but he may also be infected by handling infected cattle, alive or dead, or by handling other infected animals.

Cases of undulant fever have been known in Texas and New Mexico for the last forty-one years and in Arizona for the last twenty-one years, but now the disease has been recognized

in Maryland, Louisiana, New York, South Dakota, Connecticut, North Carolina, District of Columbia, Iowa, Utah, Oregon, Pennsylvania, Illinois, Indiana, Tennessee, Ohio, Virginia and Michigan. Such authorities in problems of the diseases affecting animals as Theobald Smith of the Rockefeller Institute are convinced that the condition has been spread by infected cattle, and that the power of the germ to infect man has been increased by its passage through the pig.

Times change and we change with them. Diseases change and the battle against infection is continuously fought on an ever changing front. The famous French investigator Charles Nicolle wrote: "Mediterranean fever is in the course of evolution, and is tending to become chronic. It is a malady which, on account of its manifestations and its chronicity, will become one of the commonest and most stubborn diseases. . . . Mediterranean fever is a disease of the future."

The rate at which cases of undulant fever are being described in various portions of our country indicates that Nicolle's prophecy is approaching realization. So rapid has been the development that health authorities have not yet worked into laws the proper procedures for detecting and eliminating the condition among cattle; certified milk organizations have not taken proper cognizance of its possible appearance in cattle otherwise suitable for producing a milk supply. We do know that pasteurization can destroy the organism when it is present in milk. But pasteurization does not remove the possibility of contact with infected cattle and with the meat of other infected animals. The problems of undulant fever are among the immediate problems of scientific medicine.

UNNECESSARY BLINDNESS

THE Colorado Commission for the Blind has recently completed a four years' study of blindness in that state, as a result of which it appears that sight has been lost needlessly in many cases. Injuries from which the eyes might have been protected, diseases which were not treated in time, have left their ineradicable mark on hundreds of persons. Dr. Edward Jackson, who reports the investigation, puts foremost among the methods of preventing blindness the securing of good treatment at the earliest possible time. It is tragical that so many have allowed the precious moment, when treatment might have been effective, to pass by in ignorant delay or in consulting some unqualified prescriber of glasses. Now they are left to cry: "Dead life, blind sight, poor mortal living ghost," whom modern medical science might have saved, had it been given the chance.

WE SPEED AND WE DIE

WHEN man is born his system has in it a certain amount of vitality or "go." As he uses this up he becomes tired. As he rests, his cells and the tissues they make, recuperate. Then he uses them some more. As he grows older the power of recuperation of the aging cells becomes less and less. When they lose their power they begin to wear out or degenerate. At the end of senescence and degeneration is death. Now it seems obvious that having a certain amount of vitality to use up, the rate at which we use it up determines to some extent the length of time that it will last. The whole tendency of modern American civilization has been toward a greater speeding up of human activity and a lessening of our years.

Figures calculated by the astute employees of the life insurance companies who help to figure the premiums, which are based on the life expectancy of the individual at any certain age, indicate that the life expectancy at birth increased from some thirty years in 1825 to fifty-five years in 1925, and that the life expectancy after 50 years of age increased by only three-tenths of a year in the same period. They show that in the period from 1922 to 1927 the life expectancy after 40 years of age has actually decreased by about one year. This decrease in life expectancy is related quite definitely to the increased wear and tear on the human body brought about by our modern method of living.

The stress and strain of modern life are tremendous. A great furor in the stock market, such as occurred within the last few months, is undoubtedly reflected in the disease and death rates. Suicides are not the only deaths directly traceable to failure and mental stress. The old time physician, who was a great observer of mankind, put worry and strain among the contributing causes of many diseases, and particularly of the degenerative diseases of the heart, blood vessels and kidneys that come after middle life. When there is a great fall in the stock market men appear in the offices of physicians and are found to have sugar in their urine whereas they had not shown this symptom previously. Worry and mental strain produce a loss of tone in the tissues of the body and the sagging lines of care are familiar to every student of the human countenance.

For more than five years scientific medicine has been offering to the people a means of

detecting the onset of the degenerative diseases in their earliest stages; indeed, at a time when it is possible to give advice that may be the means of insuring some increased years. The periodic physical examination will do this if men and women will only avail themselves of it. When a physician finds, by means of such an examination, that the kidney function is disturbed, as shown by the presence of albumin or casts in the urine, that there is sugar present in the urine and in increased amounts in the blood, that the blood vessels are hardened and that the blood pressure is much higher than it should be, or that the function of the heart is failing, then the physician will give the signal to slow down.

The speed of modern life means not only speed in transportation. The signal to slow down means less working hours per day and more rest and play; it means less food for the body organs to work upon; it means less responsibility to carry in the office and in the home; it means a winter and summer vacation whereas formerly one and perhaps neither was indulged in. With a lessened rate of living there will be more hours of living. After all, most of us measure our lives in years of living rather than in years of accomplishment.

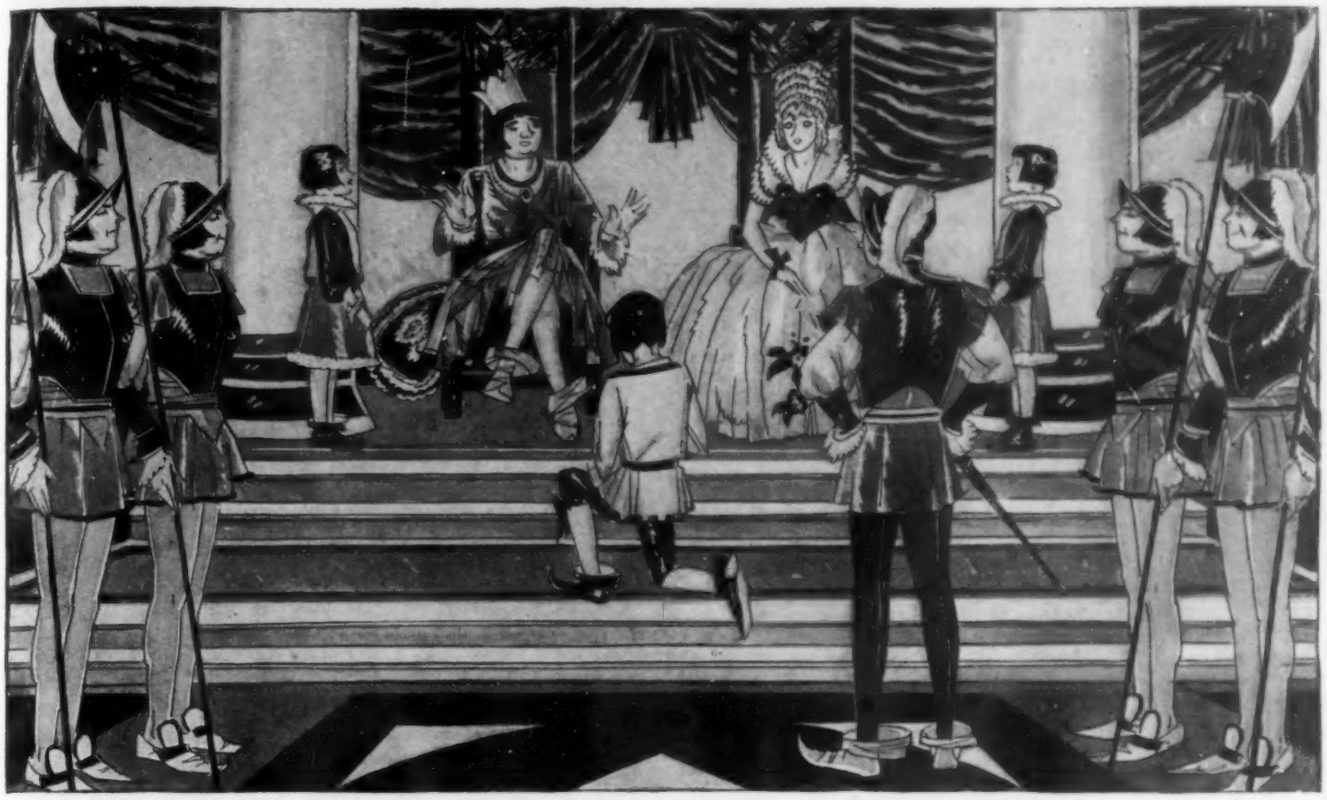
INFANT CARE

THE hundreds of books, pamphlets and instruction sheets on the care of the infant indicate a great desire and need for material of this character. The catechism prepared years ago by Dr. L. Emmett Holt has sold into millions of copies. Dr. Herman N. Bundesen, formerly health commissioner of Chicago, with the aid of numerous assistants and associates, prepared a guide which was then submitted to the members of the American Pediatric Society for corrections. This pamphlet, handsomely illustrated and designed to appeal to a mental age of 14 years, has also reached millions of readers.

The Children's Bureau of the United States Department of Labor issued a booklet in 1914. It was not a handsome or an inspiring leaflet, since it was printed in small type, had no illustrations, and seemed to bear little scientific authority. Now the bureau presents its pamphlet in new form, revised by Dr. Martha M. Elliot, director of the child hygiene division of the Children's Bureau, and by an advisory committee of specialists in the diseases of children including Dr. Howard Childs Carpenter, representing the American Child Health Association; Dr. Julius H. Hess, representing the section on diseases of children of the American Medical Association; and Dr. Richard M. Smith, representing the American Pediatric Society. Both Drs. Hess and Smith are authors of volumes on this subject which have had considerable vogue among both physicians and the public.

The result of this collaboration is the most complete and probably the soundest and safest guide book for raising an infant that has yet been developed. It goes far beyond the other books and pamphlets that have been mentioned. There is hardly a question that can arise in the mother's mind for which an answer cannot be found. The book is sold by the Government Printing Office for a dime and it is the equivalent of volumes that cost dollars at the book stores. If all the mothers of our country could learn its contents and apply them in the care of infants the mortality rate for babies would drop appreciably.

But from the point of view of typography and printing style the book is years out of date. Perhaps the Government Printing Office and the Children's Bureau are without experts in modern publication methods. The large type in the book shows so much offset as to make it annoying to the reader, the small type particularly in the incomplete index is unhygienic and distressing. The outline illustrations are amateurish and distorted and the ink is gray. Given the same material and a few cents more to spend per copy, any modern printer could turn out a job that would be an inspiration to the mother for its beauty as well as for its scientific soundness and safety.



KING JOY: *Let the trial begin. Present your charges against him.*

The Trial of Johnny Jones

By Elmer E. Ellsworth

CAST OF CHARACTERS

KING JOY	LADY MILK
QUEEN HAPPINESS	HER ATTENDANTS
JOHNNY JONES	MR. AND MRS. BROWN
GENTLEMEN-IN-WAITING	BREAD AND BUTTER
LADIES-IN-WAITING	FRUIT BROTHERS
TRAIN BEARERS	CEREALS
HERALDS	SIR JAMES CARROT
ROYAL PROSECUTOR	LADY PARSNIP
CAPTAIN OF THE GUARDS	MISS RADISH
GUARDS	THE HON. JOHN POTATO
GENERAL BATH TUB	COUNTESS CABBAGE
HONORABLE WINDOW PANE	MADAM SPINACH
CAPTAIN POSTURE	SIR TOM TOMATO
BARON CECIL DRINKWATER	EARL EDWARD BEET
MAJOR WEIGHT	SIR CECIL CELERY
TOOTH BRUSH TWINS	LADY LETTUCE
MR. CLOCK	SUNSHINE GIRLS

ACROBATS

SCENE: Throne room of the King's palace in Healthland. There are two thrones and the rest of the stage is open.

HERALDS *(appear right and left and blow their trumpets for attention).*

King Joy and Queen Happiness of Healthland and their Court. *(A march is played off stage, and Gentlemen-in-Waiting and Ladies-in-Waiting, King and Queen enter right, with four Train Bearers holding up their robes. The King and Queen ascend their thrones and the Train Bearers sit at their feet. Enter Royal Prosecutor, Lords, Ladies, etc.; except Johnny Jones, Guards, Sunshine Girls, Cereals, Acrobats.)*

QUEEN HAPPINESS: What a lovely morning, and every one looks so happy.

KING JOY: Is there any one who has a complaint to make or a wrong to be righted on this Justice Day?

ROYAL PROSECUTOR: Your Majesty, I have a complaint. Your Royal Guards have captured Johnny Jones, as he was wandering around the palace grounds at 10:30 last evening. I, therefore, charge him with breaking the bedtime rule and other laws of Healthland.

KING JOY: Indeed, this is most serious. Bring the prisoner before me.

ROYAL PROSECUTOR: Bring forth the prisoner.

(Johnny Jones escorted by Captain and four guards enters and kneels before the throne. King looks at him.)

FIRST GIRL TRAIN BEARER: What a nice looking boy!

SECOND G. T. B.: Yes, but don't forget he has broken the law.

FIRST G. T. B.: I'd like to stay out until half past ten myself.

SECOND G. T. B.: You'd be sorry if you did, because we need all that time for sleep.

KING JOY: Johnny Jones, what have you to say for yourself?

JOHNNY JONES: Oh, Your Majesty, I'm not a bad boy, and although I have broken some of the health laws, please be merciful.

QUEEN HAPPINESS: Let us find out more about this boy and see if we can't help him.

KING JOY *(to Royal Prosecutor):* Let the trial begin. Present your charges against him and we will listen to the evidence. *(To Johnny):* You may be seated.

ROYAL PROSECUTOR: I shall first call Mr. Clock.

MR. CLOCK: Your Majesty, the bedtime rule calls all boys and girls to bed before 8 o'clock, but when my hands are at that hour, Johnny very seldom obeys. So I charge him with breaking the bedtime law.

ROYAL PROSECUTOR: And now I call on General Bath Tub.

GENERAL BATH TUB: Your Majesty, I am sorry to have to report that the prisoner neglected to wash his face and hands before eating on three different evenings last week. In addition, he has been very careless about washing above his wrists and behind his ears and also the back of his neck. Moreover, last week he did not take even one complete bath. As you all know, cleanliness is one of the first laws of health and must be rigidly enforced.

ROYAL PROSECUTOR: May I present the Hon. Window Pane?

HON. WINDOW PANE: Your Majesty, a careful examination of Johnny Jones' habits shows that during the months of March and April he slept with all windows closed on twelve different nights. Your Majesty, this condition must not go on, as the law states very clearly that we must all sleep with the windows open.

ROYAL PROSECUTOR: My last witnesses, Your Majesty, are the Tooth Brush Twins. They have a serious charge to make.

FIRST TOOTH BRUSH TWIN:

I charge that Johnny Jones
Is careless of his teeth;
He doesn't brush the upper part
Or even underneath.

SECOND T. B. T.:

And I declare that this is wrong
He should not break our laws;
But he must brush his teeth each day
And keep away all flaws.

Johnny Jones

BOTH: And remember, Johnny, to brush up and down.

ROYAL PROSECUTOR: Your Majesty, these are all the charges I have to make against Johnny Jones. You have heard the evidence and can see how the prisoner has broken the laws of Healthland.

KING JOY: My boy, are these charges true?

JOHNNY: Yes, Your Majesty, I have broken all those laws.

KING JOY: Then I shall—

QUEEN HAPPINESS: But just a moment, Your Majesty, before you pronounce judgment. We have heard but the one side. Perhaps Johnny has some friends who will appear in his behalf and can show that he is a good citizen of Healthland in spite of these bad things.

KING JOY: Quite right, my dear. Does any one appear for Johnny Jones? *(From off stage come cries of "We do." Sunshine Girls come dancing in.)*

FIRST SUNSHINE GIRL: Your Majesty, Johnny Jones plays with us every day. *(Girls sing "Ten Sunshine Fairies.")*

SONG

Ten Sunshine fairies came
Dancing along together;
Ten Sunshine fairies came
Bringing Maytime weather;
Hand in hand they tripped along,
Laughing, dancing, singing:
Sunshine makes you big and strong;
Hear the health bells ringing.
Ten Sunshine fairies came
Dancing along together;
Ten Sunshine fairies came
Bringing Maytime weather.

MR. AND MRS. BROWN BREAD AND BUTTER: Please, Your Majesty, we should like to say that Johnny is a very good friend to us and eats plenty of bread and butter.

CAPTAIN POSTURE *(strides forward, salutes):* Your Majesty, I should like to report in behalf of the prisoner that he is one of my best examples of good posture and keeps it whether standing, walking or sitting.

SIR JAMES CARROT:

I am Sir James Carrot, Majesties dear!
And these vegetables with me I pray you to hear.

LADY PARSNIP:

Your Honor, I'm Lady Parsnip.
By rosy cheeks you'll see
The prisoner's a very good friend to me.

MISS RADISH:

I, Miss Radish, come in the spring;

For the boy who planted me a good word
I bring.

THE HON. JOHN POTATO:
I'm Sir John Potato, delicious to bake,
The prisoner likes me; I'm here for his sake.

COUNTESS CABBAGE:
Your Majesty, Countess Cabbage feels that 'tis clear
Because he is so fond of me I should appear.

MADAM SPINACH:
I am Madam Spinach, in my green dress;
That Johnny likes me I am here to confess.

SIR TOM TOMATO:
Sir Tom Tomato, your service to do;
In my family this boy is a friend tried and true.

EARL BEET:
Earl Edward Beet is my name, don't you know;
I'm here to take his part; John loves me so.

SIR CECIL CELERY:
And now I appear, Sir Cecil Celery, at your command;
To help this young friend of ours; here I do stand.

LADY LETTUCE:
I'm Lady Lettuce, King and Queen so dear;
We vegetables promise strength to him all through the year.

ALL: We promise strength to him all through the year. *(Join hands in a circle around Johnny Jones before making this promise. Then all bow and promptly retire.)*

LADY MILK: I am Lady Milk and these are my helpers. You can see by looking at Johnny that he is fond of us, so we are going to sing a song for him. *(Sing "Milk Song." *)*

SONG

Come, come, sing a song of milk,
'Tis milk that sets us a-growing.
Milk will make us fine as silk,
Then let's keep milk a-flowing.

To each of you I'll give a cup
And then I'll drink my own milk up;
'Twill bring us up in our weight, you know,
And soon we'll be round and rosy.

GRAPEFRUIT: Hardly a day goes by—

ORANGE FRUIT: When we—

BANANA FRUIT: Do not contribute—

APPLE FRUIT: To Johnny's diet.

GRAPEFRUIT: Each morning he has grapefruit.

MR. CLOCK: *When my hands are at 8 o'clock, Johnny seldom obeys the bedtime rule.*

ORANGE FRUIT: Or orange juice.

BANANA FRUIT: Or a banana cut up on his cereal.

APPLE FRUIT: And he always takes an apple to school to eat at recess.

MAJOR WEIGHT: Your Majesty, it is only right that you should know that my young friend here has worked well, played out in the sunshine, and eaten carefully so that he has come up from the red, or underweight, group to the white group.

OATMEAL: Your Majesty, I should like to report that Johnny eats one of us for his breakfast every morning. *(Cereals sing "Oatmeal Song." *)*

SONG

If you think that I don't eat my oatmeal
At breakfast every day,
Then you are wrong, for I mean to be strong
And this is an excellent way.
To eat oatmeal with sugar and cream,
Oh, this is the way to be healthy and strong;
Healthy and strong boys and girls.
Oh, this is why we're so happy and gay
We always eat some porridge every day.

BARON CECIL DRINKWATER: Your Majesty, Johnny Jones drinks his four glasses of water every day and sometimes more.

JOHNNY: Oh, here are my exercise friends!

LEADER OF THE GROUP: Your Majesty, we have come to tell you that Johnny is one of our most active members and exercises regularly. We should like to show you some of the stunts we do. *(Performs various stunts.)*

KING JOY: Has any one else anything to say for or against Johnny Jones? *(Pauses.)* The prisoner will stand. *(Johnny rises.)* My boy, the charges brought against you are serious. However, I am going to give you another chance on condition that you promise to obey hereafter all the laws of Healthland.

JOHNNY: Oh, thank you, Your Majesty. I promise that I will obey every single law.

KING JOY: I know you will try, Johnny. And now you are free to join your playmates.

[*Curtain.*]

* Words by Mrs. Frederick Peterson, Child Health Organization; music copyrighted by G. Schirmer, Inc.

(Continued from page 148.)

1,504. These are not suggested as consecutive days' diets for any one, but rather are offered to show a range of offerings. By a simple addition or subtraction, it is possible for any one to keep at a narrow variation from standard.

TABLE 2.—*Menu for One Day*

The breakfasts are all substantial. For business men and women, the forenoon should be the most productive part of the day. We are not fair to the ones who pay our salaries if we do not go adequately prepared for the forenoon.

	Amount	Protein, Gm.	Fat, Gm.	Carbohydrate, Gm.	Calories
Breakfast					
*Stewed prunes	6	2	..	34	140
Puffed rice	½ cup	1	..	6	26
sugar	1 teaspoonful	..	..	5	20
skimmed milk	½ cup	4	0.5	6	45
Eggs	2	12	12	..	156
Thin slice E. W. bread toasted	1	1	..	7	32
*Coffee					
cream	1 tablespoonful	0.4	3	0.6	31
sugar	1 teaspoonful	..	..	5	20
Luncheon					
Clear soup	6 ounces	4	..	..	15
Cold chicken	2 ounces	12	10	..	134
Bran bread	½ slice	3	..	9	44
*Cucumber and radish salad	1 serving	1	..	4	20
Fresh fruit	1 serving	0.7	..	11	47
Tea					
Dinner					
Consomme	1 cup	4	..	..	15
*Roast veal	1 serving	20	10	..	170
Asparagus	8 stalks	1	2	2	30
Peas	½ cup	4	2	10	72
*Tomatoes and chives salad	1 serving	1	..	6	27
Fresh pear	1	1	..	10	44
Black coffee					
		72	40	116	1,088

TABLE 3.—*Menu for One Day*

The luncheon menus have been kept to items easily secured for workers who eat in restaurants or who carry their luncheon. Also this simplicity will be a boon to the busy housewife who eats alone at home. Whole milk is indicated at luncheon because it might be difficult to secure skimmed milk downtown.

	Amount	Protein, Gm.	Fat, Gm.	Carbohydrate, Gm.	Calories
Breakfast					
Fresh apricots	3	1	..	13	56
Krumbled bran	½ cup	3	1	23	106
sugar	1 teaspoonful	..	..	5	20
skimmed milk	½ cup	4	0.5	6	45
Eggs	2	12	12	..	156
Thin slice E. W. bread toasted	1	1	..	7	32
Clear coffee					
Luncheon					
Clear soup	6 ounces	4	..	..	15
Poached egg	1	6	6	..	78
Bran roll	1	5	..	17	88
Fresh fruit	1 serving	0.7	..	11	47
Milk	6 ounces	6	7.5	9	128
Dinner					
*Chicken broth	1 cup	4	..	..	15
Roast beef	2 ounces	12	16	..	190
Mushrooms	1 cup	5	5	10	105
Onions	1 medium	1	2	6	47
*Endive salad	1	..	..	5	19
Grapes	1 bunch	1	..	19	80
Black coffee					
		66	48	131	1,227

And if you are a devotee of the afternoon tea habit, take the dainty bit offered, but count your calories here:

Tea					
Tea	1 cup				
Sugar	1 cube	..	..	5	20
Vanilla wafers or	2	..	..	..	54
Shortbread wafers	2	..	..	..	78

* The method of preparing the foods so designated in these tables is described elsewhere in this article.

TABLE 4.—*Menu for Sunday or Holiday*

	Amount	Protein, Gm.	Fat, Gm.	Carbohydrate, Gm.	Calories
Breakfast					
Huckleberries	½ cup	1	1	13	60
sugar	1 teaspoonful	..	..	5	20
whole milk	¼ cup	2	2.5	3	23
Cornflakes	½ cup	1	..	10	44
sugar	1 teaspoonful	..	..	5	20
skimmed milk	½ cup	4	0.5	6	45
Bran muffin No. 1	1	2	4	1	46
butter	1 teaspoonful	..	4	..	36
Clear coffee					
Dinner					
*Fruit cocktail No. 2	1 serving	1	1	12	57
Roast chicken	4 ounces	23	19	..	268
Celery	4 pieces 5 inches long	..	..	2	8
Squash	½ cup	2	2	10	66
*Perfection salad	1 serving	3	..	2	18
Fresh raspberries with ice and lemon	½ cup	..	..	9	36
Black coffee					
American cheese	1 inch cube	6	7	..	87
Supper					
Clear soup	1 cup	4	..	..	15
Chicken salad	1 serving	10	9	1	129
*Bran muffin No. 1	1	2	4	1	46
*Cauliflower	½ cup	2	3	4	43
*Lemon ice	1 serving	..	..	61	244
Tea					
		63	57	145	1,311

TABLE 5.—*Menu for One Day*

A light lunch will carry you easily through until time to reach home. Do not overbalance the day by a scanty breakfast, heavy lunch and heavy dinner.

	Amount	Protein, Gm.	Fat, Gm.	Carbohydrate, Gm.	Calories
Breakfast					
Grapefruit (medium)	½	1	..	7	30
sugar	1 teaspoonful	..	..	5	20
Scrambled egg	1	6	6	..	78
butter	1 teaspoonful	..	4	..	36
Bran muffin No. 1	1	2	4	1	46
butter	1 teaspoonful	..	4	..	36
Skimmed milk	6 ounces	6	0.7	0.9	66
Luncheon					
Clear soup	6 ounces	4	..	..	15
Bran roll	1	5	..	17	88
Spinach	½ cup	2	6	3	72
Fresh fruit	Average	0.7	..	11	47
Milk	6 ounces	6	7.5	9	128
Dinner					
Bouillon	1 cup	4	..	..	15
*Beef stew with onions, carrots, string beans and mushrooms	1 serving	32	16	17	339
Head lettuce salad	½ head	..	..	5	19
Fresh cherries	12	1	..	9	41
Black coffee					
		70	48	85	1,076

TABLE 6.—*Menu for One Day*

The figures given for bran roll are for the commercial product. The recipes for made-up items are on a basis of four servings, as it is not necessary to have food especially prepared for one member of the family. The salads and simpler desserts are for single servings.

	Amount	Protein, Gm.	Fat, Gm.	Carbohydrate, Gm.	Calories
Breakfast					
Cantaloup, medium	½	1	..	14	60
Muffet	1	3	..	18	84
sugar	1 teaspoonful	..	..	5	20
skimmed milk	½ cup	4	0.5	6	45
Thin slice E. W. bread toasted	1	1	..	7	32
Egg	1	6	6	..	78
Skimmed milk	6 ounces	6	0.7	9	66
Luncheon					
Clear soup	6 ounces	4	..	..	15
Hard egg	1	6	6	..	78
Bran bread	½ slice	3	..	9	44
String beans	½ cup	1	2	3	34
Fresh fruit	1 serving	1	..	11	47
Milk	6 ounces	6	7.5	9	128

TABLE 6.—*Menu for One Day—Continued*

	Amount	Protein, Gm.	Fat, Gm.	Carbohydrate, Gm.	Calories
Dinner					
Consomme	1 cup	4	..	..	15
Roast lamb	4 ounces	28	16	..	256
Turnips	½ cup	1	2	6	44
Spinach	½ cup	2	6	3	72
*Asparagus salad	1 serving	1	..	3	15
*Orange ice No. 2	1 serving	..	..	66	263
Black coffee					
		78	47	169	1,396
*Lemon ice		..	..	..	244

And if after the show, the others want to get a bite, you may do so too but don't forget to count the calories.

TABLE 7.—*Menu for One Day*

American cheese and Philadelphia cream cheese are often included in the luncheon menu because these are easily obtained at cafeterias and restaurants and the amount is easily indicated. Also they are stable—not prepared one way one day and another way the next, and consequently do not vary much in fat content.

	Amount	Protein, Gm.	Fat, Gm.	Carbohydrate, Gm.	Calories
Breakfast					
Baked apple (medium—no sugar)	1	..	1	17	77
Muffet	1	3	..	18	84
sugar	1 teaspoonful	..	..	5	20
skimmed milk	½ cup	4	0.5	6	45
Egg	1	6	6	..	78
Thin slice E. W. bread toasted	1	1	..	7	32
Coffee					
cream	2 tablespoonfuls	0.8	6	1.2	62
sugar	1 teaspoonful	..	..	5	20
Luncheon					
Clear soup	6 ounces	4	..	..	15
American cheese	2 1-inch cubes	12	14	..	174
*Tomato and cucumber salad	1 serving	2	..	6	30
Fresh fruit	1 serving	0.7	..	11	47
Milk	6 ounces	6	7.5	9	128
Dinner					
Bouillon	1 cup	4	..	..	15
Roast chicken	4 ounces	23	19	..	268
Swiss chard	½ cup	2	2	3	37
Carrots	½ cup	1	2	7	52
*Orange and apple salad	1 serving	1	..	18	76
Lemon ice	1 serving	..	..	61	244
Black coffee					
		71	58	174	1,504

TABLE 8.—*Menu for One Day*

The same figures are given each noon for fresh fruit. These figures are for an average of a medium sized peach, pear, orange, apple, ½ cup of raspberries, or a slice of watermelon.

	Amount	Protein, Gm.	Fat, Gm.	Carbohydrate, Gm.	Calories
Breakfast					
Fresh peach (medium)	1	1	..	10	44
Omelet	1	6	10	..	114
Thin slice of E. W. bread toasted	1	1	..	7	32
Skimmed milk	6 ounces	6	0.7	9	66
Luncheon					
Clear soup	6 ounces	4	..	..	15
American cheese	2 1-inch cubes	12	14	..	174
*Orange salad	1 serving	1	..	18	79
Bran roll	1	5	..	17	88
Milk	6 ounces	6	7.5	9	128
Dinner					
*Tomato consomme	1 cup	4	..	5	37
Broiled fish	1 serving	12	10	..	138
String beans	½ cup	1	2	3	34
Celery (4 pieces 5 inches long)		..	..	2	8
*Cold slaw No. 2	1 serving	1	..	10	42
Red raspberries	½ cup	..	..	9	36
cream	2 tablespoonfuls	0.8	6	1.2	62
sugar	1 teaspoonful	..	..	5	20
Black coffee					
		61	50	105	1,117

HOW TO PREPARE FOODS SUGGESTED FOR THE REDUCING DIET

COFFEE (Two Servings)

Materials:

½ cup ground coffee
½ egg
½ cup cold water
3 cups boiling water

Method:

1. Wash egg, break and beat slightly
2. Dilute one-half egg with one-fourth cup cold water
3. Add one-half shell (crushed) to egg
4. Mix with coffee
5. Pour this mixture into coffee pot
6. Pour boiling water in mixture
7. Stir well
8. Let boil three minutes
9. Add remainder of cold water
10. Let stand in a warm place ten minutes before serving
11. Serve in hot coffee cups

BEEF BROTH

Materials:

2 pounds beef
2 pounds bones (cracked)
2 quarts water
1 teaspoonful salt

Method:

1. Wipe meat
2. Cut meat into small cubes, removing fat and gristle
3. Put bones and meat into pan
4. Cover with water
5. Let stand an hour in a cool place
6. Cook for three hours over low flame
7. Strain
8. Let stand until cold
9. Skim off fat
10. Add salt

Average serving: protein, 4 Gm.; fat, —; carbohydrate, —; calories, 15.

CHICKEN BROTH

Materials:

1 fowl
2 quarts cold water

Method:

1. Clean chicken
2. Remove fat and skin
3. Disjoint
4. Wipe with a wet cloth
5. Put in a kettle
6. Cover with cold water
7. Cook until chicken is tender
8. Strain
9. Allow to cool
10. Remove fat
11. Season to taste
12. Serve very hot

Average serving: protein, 4 Gm.; fat, —; carbohydrate, —; calories, 15.

GREEN SALAD (Two Servings)

Materials:

1 cup shredded cabbage
⅓ cup diced celery
⅓ cup diced cucumber
1 tablespoonful chopped green pepper
1 hard cooked egg cut into slices
2 tablespoonfuls mineral oil mayonnaise
Salt and pepper

Method:

1. Mix cabbage, celery, cucumber and green pepper together in bowl
2. Add egg and mayonnaise
3. Season to taste with salt and pepper
4. Chill thoroughly before serving

Total recipe: protein, 7 Gm.; fat, 7 Gm.; carbohydrate, 5 Gm.; calories, 111.

One serving: protein, 4 Gm.; fat, 4 Gm.; carbohydrate, 3 Gm.; calories, 55.

MUTTON BROTH (Four Servings)

Materials:

- 1½ pounds mutton (from neck)
- 1 quart cold water
- 1 teaspoonful salt
- Few grains pepper

Method:

1. Wipe meat
2. Cut meat into small cubes removing all fat and gristle
3. Put bones and meat into a pot
4. Cover with water
5. Let stand one hour in a cool place
6. Cook for three hours over low flame
7. Strain
8. Let stand until cold
9. Skim off fat
10. Reheat to boiling point when wanted
11. Season to taste
12. Season with salt and pepper

One serving: protein, 4 Gm.; fat, —; carbohydrate, —; calories, 115.

TOMATO CONSOMME (Three Servings)

Materials:

- 1½ cups chicken broth fat removed
- 1½ cups cooked tomato
- 3 teaspoonfuls chopped onions
- 3 teaspoonfuls chopped parsley

Method:

1. Add tomato, onion and parsley to chicken broth
2. Cook five minutes.
3. Strain
4. Season with salt and pepper
5. Serve

Total recipe: protein, 12 Gm.; fat, —; carbohydrate, 14 Gm.; calories, 110.

One serving: protein, 4 Gm.; fat, —; carbohydrate, 5 Gm.; calories, 37.

COFFEE GELATIN (One Serving)

Materials:

- ½ teaspoonful gelatin
- 1 tablespoonful cold water
- ½ cup boiling coffee
- ½ grain saccharin
- ½ teaspoonful cold water

Method:

1. Soak gelatin in cold water five minutes
2. Add boiling coffee and stir until gelatin is dissolved
3. Add saccharin dissolved in cold water
4. Pour in a small mold and put in a cool place
5. When firm remove from the mold and serve

Total recipe: protein, 2 Gm.; fat, —; carbohydrate, —; calories, 6.

LEMON ICE (Four Servings)

Materials:

- 1 cup sugar
- 2 cups water
- ¾ cup lemon juice

Method:

1. Make syrup by boiling sugar and water together for five minutes
2. Cool
3. Add fruit juice and freeze

Total recipe: protein, —; fat, —; carbohydrate, 244 Gm.; calories, 976.

One serving: protein, —; fat, —; carbohydrate, 61 Gm.; calories, 244.

LETTUCE AND TOMATO SALAD (One Serving)

Materials:

- 1 small tomato
- 2 leaves of lettuce
- Mineral oil French dressing

Method:

1. Remove skin from tomato
2. Cut in quarters and place on lettuce
3. Dress with French dressing

Total recipe: protein, 1 Gm.; fat, —; carbohydrate, 5 Gm.; calories, 22.

MOCHA CREAM (Two Servings)

Materials:

- 1 teaspoonful gelatin
- 2 tablespoonfuls cold water
- ½ cup boiling Kaffee Hag
- ½ tablespoonful sugar
- 1 teaspoonful water
- ¼ cup cream, 20%

Method:

1. Soak gelatin in cold water five minutes
2. Add boiling Kaffee Hag
3. Stir until gelatin is dissolved
4. Add sugar
5. Allow to stand until nearly set
6. Beat with egg beater until foamy
7. Beat in cream
8. Pour in molds
9. Allow to stand in cool place until firm
10. Remove from mold and serve

Whole recipe: protein, 5 Gm.; fat, 12 Gm.; carbohydrate, 10 Gm.; calories, 167.

One serving: protein, 3 Gm.; fat, 6 Gm.; carbohydrate, 5 Gm.; calories, 84.

CHICKEN AND VEGETABLE SALAD (One Serving)

Materials:

- ¼ cup chopped celery
- ¼ cup shredded cabbage
- ¼ cup cold chicken (cut in pieces)
- 1 tablespoonful mineral oil mayonnaise
- Salt to taste
- ¼ cup diced beets
- 1 large leaf head lettuce

Method:

1. Place celery, cabbage and chicken in a bowl and mix
2. Add mayonnaise and mix well
3. Add salt to taste
4. Add beets and mix slightly
5. Serve at once on lettuce

Total recipe: protein, 9 Gm.; fat, 7 Gm.; carbohydrate, 6 Gm.; calories, 121.

CAULIFLOWER (Two Servings)

Materials:

- 1 small head cauliflower
- 1 quart boiling water
- ½ teaspoonful salt
- 1 teaspoonful butter

Method:

1. Remove outer leaves of cauliflower
2. Let stand, head downward in cold water, twenty minutes
3. Cook, head up, in boiling salted water, twenty minutes
4. Drain
5. Separate flowerets
6. Serve in hot vegetable dish with melted butter

Total recipe: protein, 3 Gm.; fat, 5 Gm.; carbohydrate, 7 Gm.; calories, 86.

One serving: protein, 2 Gm.; fat, 3 Gm.; carbohydrate, 4 Gm.; calories, 43.

STUFFED TOMATOES (One Serving)

Materials:

- 1 medium sized tomato
- ½ teaspoonful chopped onion
- 1 tablespoonful chopped, cooked beef, veal or chicken
- ½ teaspoonful chopped green pepper
- 1 teaspoonful celery
- Salt and pepper

Method:

1. Wipe tomato
2. Remove thin slice from stem end of tomato
3. Take out seeds and pulp
4. Mix onion, meat, green pepper and celery
5. Season with salt and pepper
6. Refill tomato with this mixture
7. Place tomato in small pan
8. Add enough water to keep pan from burning
9. Bake twenty minutes in a hot oven

Total recipe: protein, 7 Gm.; fat, 4 Gm.; carbohydrate, 5 Gm.; calories, 82.

CHICKEN AND CARROT SALAD (One Serving)

Materials:

¼ cup chicken (cut in pieces)
½ cup raw grated carrot
2 tablespoonfuls mineral oil mayonnaise
Salt
2 lettuce leaves

Method:

1. Mix chicken, carrot and mayonnaise lightly so that mixture will not be mushy
2. Add salt to season
3. Serve on lettuce

Total recipe: protein, 9 Gm.; fat, 7 Gm.; carbohydrate, 7 Gm.; calories, 127.

CUCUMBER AND RADISH SALAD (One Serving)

Materials:

7 slices cucumber, ¼ inch thick
2 leaves lettuce
2 radishes, cut in thin slices
Vinegar

Method:

1. Place slices of cucumber and radishes on lettuce
2. Serve with vinegar

Total recipe: protein, 1 Gm.; fat, —; carbohydrate, 4 Gm.; calories, 20.

TOMATO AND CHIVES SALAD (One Serving)

Materials:

1 medium sized tomato
2 leaves of lettuce
Chives

Method:

1. Skin tomato and cut in thick slices
2. Place on lettuce and sprinkle with finely chopped chives

Total recipe: protein, 1 Gm.; fat, —; carbohydrate, 6 Gm.; calories, 27.

TOMATO AND CUCUMBER SALAD (One Serving)

Materials:

1 small tomato
2 leaves of lettuce
7 slices of cucumber ⅛ inch thick
Vinegar

Method:

1. Skin tomato and cut in thick slices
2. Lay these on lettuce
3. Arrange slices of cucumber over top
4. Serve with vinegar

Total recipe: protein, 2 Gm.; fat, —; carbohydrate, 6 Gm.; calories, 30.

ORANGE AND APPLE SALAD (One Serving)

Materials:

½ medium orange, cut in sections
½ cup chopped apple
2 leaves lettuce
Mineral oil French dressing

Method:

1. Mix orange and apple and serve on lettuce
2. Dress with mineral oil French dressing

Total recipe: protein, 1 Gm.; fat, —; carbohydrate, 18 Gm.; calories, 76.

FRUIT COCKTAIL No. 2

Materials:

¼ large orange
¼ cup pineapple
6 medium size strawberries

Method:

1. Cut orange in pieces and place in bowl
2. Add strawberries, cut in quarters
3. Add pineapple
4. Mix the fruit
5. Place in fruit dish and put in a cool place until ready to serve

Total recipe: protein, 1 Gm.; fat, 1 Gm.; carbohydrate, 12 Gm.; calories, 57.

JELLIED TOMATO (One Serving)

Materials:

1 teaspoonful gelatin
2 tablespoonfuls cold water
1 cup cooked tomatoes
¼ teaspoonful salt
3 stuffed olives

Method:

1. Soak gelatin in cold water for five minutes
2. Strain tomatoes and add salt
3. Heat strained tomato to boiling point
4. Pour over gelatin and stir until it is dissolved
5. Cut olives in thin slices and place in the bottom of a small mold
6. Pour in the tomato and gelatin mixture
7. Put in a cool place until firm
8. Remove from mold and serve as a salad

Total recipe: protein, 4 Gm.; fat, 1 Gm.; carbohydrate, 5 Gm.; calories, 45.

MINERAL OIL MAYONNAISE

Materials:

2 tablespoonfuls lemon juice
2 cups mineral oil
1 egg
1 teaspoonful salt

Method:

1. Put vinegar in a bowl
2. Add five tablespoonfuls of the oil and beat well
3. Add the egg
4. Add remaining oil very slowly at first and continue to beat until all the oil has been added
5. Add salt

Total recipe: protein, 6 Gm.; fat, 6 Gm.; carbohydrate, 1 Gm.; calories, 78.

One tablespoonful: protein, —; fat, —; carbohydrate, —; calories, 2.

JELLIED EGG AND SPINACH

Materials:

⅔ teaspoonful gelatin
1 tablespoonful cold water
1 tablespoonful boiling water
1 teaspoonful lemon juice
⅓ cup chopped cooked spinach
1 hard cooked egg
Salt and pepper

Method:

1. Dissolve gelatin in cold water five minutes
2. Add boiling water and stir until gelatin is dissolved
3. Allow to cool
4. Add lemon juice and seasonings
5. Add to chopped spinach
6. Cut hard boiled egg in thin slices and place in mold
7. Pour spinach and gelatin over egg
8. Put in cool place
9. When firm remove from mold and serve on lettuce leaf with mayonnaise

Total recipe: protein, 9 Gm.; fat, 9 Gm.; carbohydrate, 2 Gm.; calories, 122.

BEEF STEW No. 2 (Four Servings)

Materials:

1 pound beef
1 cup chopped onion
2 cups chopped carrots
2 cups cut string beans
2 cups small mushrooms

Method:

1. Cut meat into 1 inch cubes and brown thoroughly in frying pan, stirring all the time
2. When dark brown, add water to cover and cook slowly until meat is tender
3. Season and cook five minutes longer
4. While meat is cooking, cook vegetables separately in small amounts of slightly salted water until each is tender
5. Season each to taste with salt and pepper and combine meat and vegetables and serve at once

Total recipe: protein, 126 Gm.; fat, 66 Gm.; carbohydrate, 67 Gm.; calories, 1,359.

One serving: protein, 32 Gm.; fat, 16 Gm.; carbohydrate, 17 Gm.; calories, 339.

WAX BEAN SALAD (Two Servings)

Materials:

- 2 cups cooked wax beans
- 2 teaspoonfuls chopped onion
- 2 teaspoonfuls chopped green pepper
- 2 tablespoonfuls chopped parsley
- ½ teaspoonful salt
- ⅛ grain saccharin
- 4 tablespoonfuls vinegar
- 1 teaspoonful sugar

Method:

1. Mix vegetables together in bowl
2. Dissolve salt and saccharin in vinegar
3. Add to vegetables and mix thoroughly
4. Chill and serve on lettuce

Total recipe: protein, 3 Gm.; fat, —; carbohydrate, 10 Gm.; calories, 52.

One serving: protein, 2 Gm.; fat, —; carbohydrate, 5 Gm.; calories, 26.

ROAST VEAL

Materials:

- Veal from loin or leg
- Salt and pepper
- Flour
- Salt pork
- ⅓ cup butter

Method:

1. Wipe meat
2. Sprinkle with salt and pepper
3. Sew in shape
4. Place on rack in dripping pan
5. Sprinkle meat and bottom of pan with flour
6. Place around meat strips of fat salt pork
7. Bake three or four hours in a moderate oven
8. Baste every fifteen minutes with ⅓ cup fat melted in ½ cup boiling water

Average serving: protein, 20 Gm.; fat, 10 Gm.; carbohydrate, —; calories, 170.

VEAL STEW (Four Servings)

Materials:

- 1 pound cheaper cut of veal
- 4 tablespoonfuls flour
- 2 tablespoonfuls butter or other fat
- ¼ cup onion cut in pieces
- ½ cup carrots cut in pieces
- 1 cup potatoes cut in pieces
- Salt and pepper

Method:

1. Cut meat into 1 inch cubes
2. Sprinkle with flour
3. Heat fat with onion in pan
4. Brown meat in pan
5. When brown add water to cover
6. Cook over slow fire
7. Steam vegetables in a small strainer over boiling water
8. When meat is done, add vegetables and seasoning

Total recipe: protein, 102 Gm.; fat, 55 Gm.; carbohydrate, 59 Gm.; calories, 1,140.

One serving: protein, 26 Gm.; fat, 14 Gm.; carbohydrate, 15 Gm.; calories, 285.

SAUERKRAUT SALAD (Two Servings)

Materials:

- 1 cup sauerkraut
- ¼ cup grated carrot
- 2 tablespoonfuls grated onion
- 2 tablespoonfuls chopped green pepper
- 2 tablespoonfuls mineral oil mayonnaise
- ⅛ teaspoonful salt

Method:

1. Mix vegetables
2. Add mayonnaise
3. Add salt
4. Chill and serve on lettuce leaf

Total recipe: protein, 4 Gm.; fat, —; carbohydrate, 14 Gm.; calories, 72.

One serving: protein, 2 Gm.; fat, —; carbohydrate, 7 Gm.; calories, 36.

STRING BEAN, BEET AND CELERY SALAD (2 servings)

Materials:

- 2 lettuce leaves
- ½ cup cold cooked string beans
- ½ cup cold cooked beets, diced
- ¼ cup chopped celery
- ½ medium sized onion, chopped

Method:

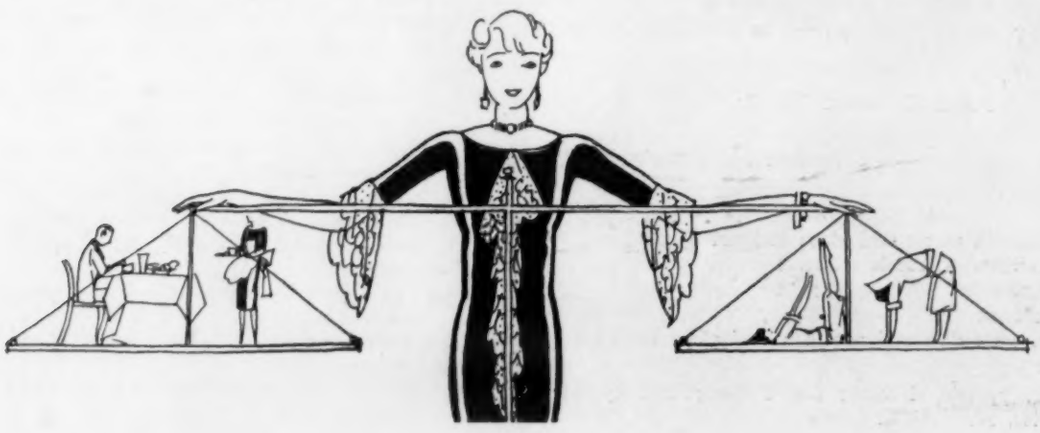
1. Place lettuce leaves on a plate
2. Arrange beets and string beans on lettuce
3. Sprinkle chopped celery and onion on top
4. Serve with mineral oil mayonnaise

Total recipe: protein, 3 Gm.; fat, 4 Gm.; carbohydrate, 13 Gm.; calories, 100.

One serving: protein, 2 Gm.; fat, 2 Gm.; carbohydrate, 7 Gm.; calories, 50.

It was necessary to perform an operation on Clara, but before this was done the doctor wished her to lose 50 of her 245 pounds. Clara had tried to reduce, but with little success. She had taken smaller servings of the same foods, all of which had a high caloric value. She was discouraged because she had been hungry, was constipated and had lost little weight.

When Clara was shown some of the foregoing daily menus she was amazed at the amounts of food allowed and said she would gain weight on such a diet, but she was asked to try it. In ten days she returned to the diet clinic greatly excited; she opened her coat and displayed how she had been forced to fold her skirt band over a couple of inches to make it fit. To her the alleviation of the constipation was magic but most mysterious was the fact that she was eating more than she ever had before.



SWEDISH SCHOOL GIRLS COMPETE in Athletic Meet at Stockholm.

American-Swedish News Exchange

HER DOG WAS HER BEST FRIEND

More than a playmate to little Eileen Depson is her big shepherd dog, Prince. One day last fall he found her on a railroad track with a roaring locomotive bearing down upon her. Seizing the child by her rompers, Prince dragged her to safety just in time.

Pacific and Atlantic

Pacific and Atlantic

JAPANESE ATHLETE

Shizuko Takashima won the girls' single sculls championship of Japan at a national meet in Tokio.

Pacific and Atlantic

GREATEST WOMAN SCIENTIST

America was host last October to Mme. Marie Curie, codiscoverer of radium, who came to accept a gift of a gram of that rare substance. She in turn will present it to a cancer hospital in Warsaw, her native city. Since 1921, Mme. Curie has paid the rental of a gram for this hospital with the income from a money gift intended for her personal use.

Pacific and Atlantic

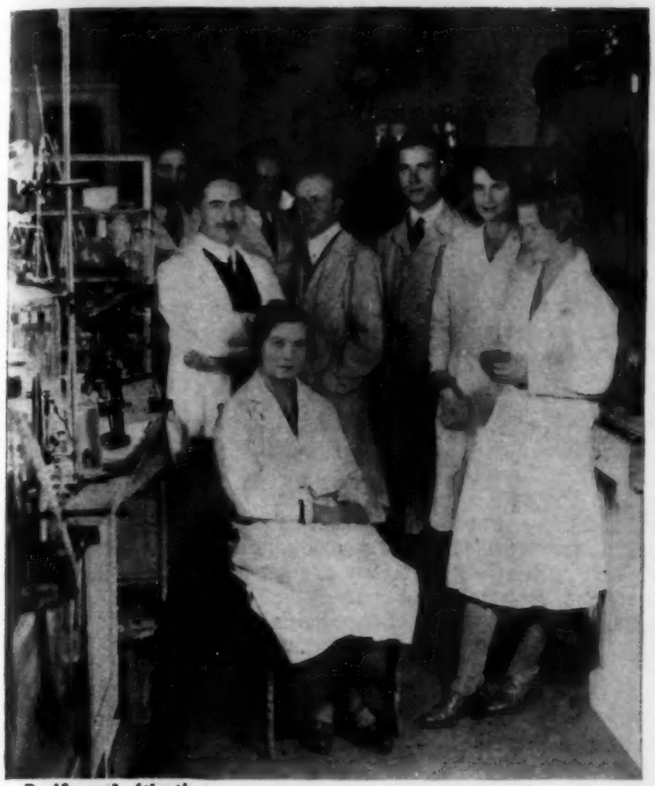
WHY WINTER IS STILL POPULAR

Snugly wrapped in warm clothes, these children enjoy the thrill of winter sports at Mill Neck, Long Island. Incidentally they are building resistance against the king of winter ills—the common cold.

Pacific and Atlantic

THESE BOYS LIKE THEIR TEACHER

It is an open question how much of the smiling eagerness of this group is due to a burning interest in the anatomy charts and how much to the fact that the man behind the pointer is Ray Conger, track star extraordinary.



Pacific and Atlantic

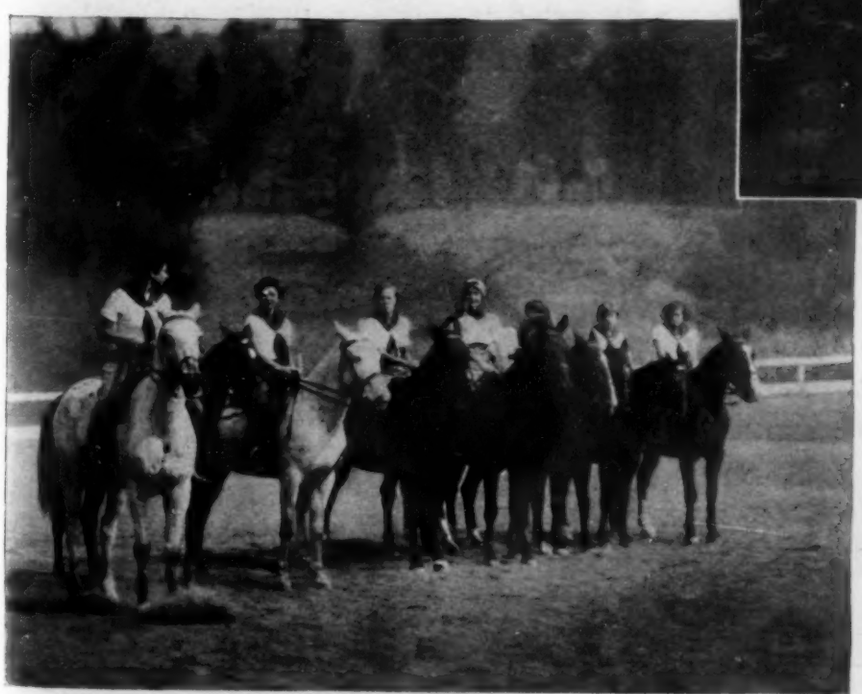
NOBEL PRIZE WINNER

Prof. Hans von Euler, Swedish chemist, shown here with a class in his laboratory, received jointly with Dr. Arthur Harden of London University the 1929 Nobel prize in chemistry. The outstanding work of these men was done on yeasts and sugars.

Pacific and Atlantic

HEALTHIEST BOY AND GIRL

National attention is directed to good health when the annual selection of the healthiest boy and girl is made at the national congress of 4-H clubs. Harold Deatline of Indiana and Florence Smock of Florida were this year's winners.



Underwood and Underwood

MOUNTED SCOUTS

Oakland, Calif., has the second troop of mounted girl scouts in the world—the Shongehon Riding Troop just organized. The other mounted troup is at Ft. Leavenworth, Kan.

HEALTH *and the* SCHOOL

Edited by
J. Mace Andress, Ph.D.
67 Clyde Street, Newtonville, Mass.

What Is Your School Doing to Prevent Colds?

THIS is the season for colds. They began early in the fall. They gained a fresh impetus during and after the Christmas holidays. The curve will rise steadily until about March and then gradually decline. During the summer months cold infections will have almost reached the vanishing point. This happens with such regularity every year that we can plot the curve for the year with a high degree of accuracy.

We are disposed to joke about colds. "Oh, it's just a cold" is a common declaration expressing our contempt for what we often regard as a slight malady. Nevertheless colds with their various serious complications are responsible for a large number of absences from work and school.

Colds Are Costliest Sickness

An investigation of colds among the employees of the Edison Illuminating Company of Boston covering a period of ten years shows that 54 per cent of absences were due to respiratory diseases. Seventy-one per cent of these absences were due to common colds. A study of a six-year record of twenty-six industrial sick benefit associations showed that about half the absences were due to respiratory infections. It has been estimated that colds cost the city of Chicago about $20,000,000 annually. It is safe to say that colds take more dollars out of people's pockets than any other sickness.

Colds are an enemy of the school. They are responsible for more absences than anything else. They are also the cause of lower physical vitality and mental waste and inefficiency. They are a tremendous handicap to the work of the school. What starts as an ordinary cold may develop into influenza, scarlet fever, pneumonia or whooping cough. Colds sometimes lay the foundation for tuberculosis and other serious troubles. In the light of such evidence prevention of colds is one of the major health problems of the school. Here are some of the things that the school may do in combating colds:

How School May Combat Colds

1. *Teach children the causes of colds.* The teaching of hygiene should be planned in relation to the special problems of the season. Since colds from now on will be such a serious problem, why not concentrate for a time on the study of why we have colds? Get children to consult various textbooks and collect bulletins on the subject from their local and state boards of health. Although the general public believes that sudden changes of temperature are responsible for colds, many persons are not susceptible to colds under such conditions. Among the contributing causes are lack of sleep, improper diet, irregular bowel movements, fatigue, lack of exercise, insufficient humidity, overheating of the schoolroom and uneven room temperatures, transmission from one to another like many communicable diseases, and lowered bodily resistance.

2. *Teach the children facts about the prevention of colds and the conditions that make for recovery if one has a cold.* Among the suggestions gained from such a study are:

Be careful about washing your hands before eating.

Keep everything out of your mouth except food and your toothbrush.

Sleep with your windows open in both summer and winter.

Breathe through your nose.

Keep your body well built up by eating plenty of nourishing foods.

Drink at least six glasses of water daily.

3. *Encourage children to stay at home and go to bed when colds begin.* Some schools do serious harm by overemphasizing perfect attendance. Children who come to school when they are ill are not only doing something that may be detrimental to their own health but they may be the means of spreading the cold at school. Here is a chance to teach health and citizenship.

Exclude Children with Colds

4. *Exclude children who have colds.* Teachers should be prompt in recognizing the symptoms of a cold. The child who has inflamed eyes, a running nose and other symptoms of a cold should be excluded until he has recovered. Modern medicine recognizes that colds are communicable. The child who is coming down with a cold is a menace to the health of those around him. He should not be allowed to return to school until the physician says that it is safe. Then, too, what looks like a cold may be the beginning of something more serious.

Washing the hands in preparation for school lunch at a North Carolina school.

5. *Refer children who have a tendency to catch colds to the school physician.* Such children may have bad teeth or diseased tonsils and adenoids, which are the fundamental causes. With the cooperation of school nurses and parents such defects may be removed.

6. *Train children in habits that tend to prevent colds.* The covering of coughs and sneezes should be insisted upon. Children should not put their fingers or pencils in their mouths or swap gum or food. Drinking fountains should be constructed so that the water shoots out horizontally instead of vertically. Teach pupils that keeping the water supply clean helps to prevent disease.

7. *Organize no-cold clubs.* Children should be in control of these clubs. The aim should be to avoid catching the common cold by the practice of appropriate health rules and suggestions.

In spite of all precautions some children will have colds but the number may be reduced by proper health teaching, training and school administration.

A STEP FORWARD IN THE TRAINING OF SCHOOL PHYSICIANS

In February, 1929, we published an editorial "Wanted: Trained School Physicians and Nurses." This was a plea for better training and a higher salary. The following resolutions have been adopted by the American Association of School Physicians and approved by the American Public Health Association:

WHEREAS, School physicians as a class have not heretofore been adequately prepared for the work which our complex educational systems now demand; and

WHEREAS, It has become necessary to take definite steps to improve this situation; therefore be it

Resolved, That the American Public Health Association does recommend consideration of and action upon, by the various states, the following minimum requirements for school physician applicants hereafter applying:

1. Graduation from an acceptable medical school, one year of acceptable internship and a license to practice medicine in the state.
2. Six semester hours of graduate training in medical subjects relating to school health work.
3. Six semester hours in a school of education of work embodying the principles of health education and the organization and administration of same.
4. This twelve hours of graduate work must be completed within three years after certification by the state board of education.

And that they further recommend:

1. The establishment of a salary rating equivalent to that now granted the high school principals in their respective localities.
2. That this salary be subject to automatic increase according to length of service.
3. And that it be subject also to an increase commensurate with educational merit and progressive professional development.

The formulation and adoption of these resolutions by the school physicians themselves mark an epoch in the development of a profession of the school physician. The professional training of school physicians will spell progress for health education.

TEACHING HEALTH

(In this column will be published each month concrete examples of good health teaching. Teachers are invited to send in contributions not exceeding 600 words and preferably less to the editor of this department. Illustrations of the actual work of children will be welcomed. Contributions accepted will be paid for but no manuscripts will be returned.)

SUPERVISED LUNCH AT FOUNTAIN SCHOOL

THE Fountain School initiated the supervised lunch in September, 1926. It was started as a part of a county-wide program of health improvement in all the schools of Pitt County, North Carolina. The cooperation of all educational agencies and of all students and patrons interested in the school made possible the success that has been achieved in the three years' time.

The following table shows the average gain in weight per child for each grade in the elementary school for school year (eight months) 1927-1928.

Grade	Number of Students	Total Gain	Average Gain per Child
1.....	65	66	1.0
2.....	39	105	2.7
3.....	44	140	3.2
4.....	30	56	1.9
5.....	36	70	1.9
6.....	31	147	4.7
7.....	26	19	0.7

The table was compiled from weight charts kept by the teachers. A pair of portable scales made possible monthly weighing of all the children. The weight charts

Through the supervised school lunch children are getting practical training in nutrition and are learning table etiquette and habits of neatness.

remained posted on the wall so that each child might watch his progress month by month.

The local board of education decided that the supervised lunch idea should be tried. The board ruled that all the teachers should bring their lunches, and that the town children, as well as the rural children, should do likewise. The opposition to this ruling has been negligible and three years of experimentation have proved the wisdom of the board's decision.

Many handicaps accompany the administration of any similar project and one that was difficult was that of the children washing their hands. For several months the old fashioned but satisfactory way of bringing a bucket of water into each room was practiced. Under this plan water was poured by means of a dipper from the full bucket of water over the hands of the children and allowed to fall into a similar empty container. Soap and towels were furnished each child by monitors.

This plan soon gave way to that of taking the children at a scheduled time to the lavatories in the toilet rooms. Although there was only one basin in each lavatory, the principal being efficient in organization and the teachers being cooperative in carrying out his ideas, this plan seemed to have advantages over the first one and therefore replaced it.

The following procedure was used in the supervised lunch period.

After the hands were washed, the lunch baskets (not air-tight tin buckets) were taken from the lockers and were held up for identification. Two paper napkins were passed. On one the lunch was spread. The other was used for a napkin or as a cover for the lunch, since schoolrooms sometimes have a few flies. After the lunch was spread, some child asked the blessing or the group offered one in unison; and then every one, including the teacher, began to eat.

In order to make this a social period, sometimes the victrola was played, or some one told a story, or perhaps there was discussion about the value of eating fruit and drinking milk, or again general conversation was enjoyed. The idea was to make the lunch period as happy and useful a period as possible.

Three Years Ago

A brief attempt will be made to show the advantages that have been derived from this phase of our health progress. Following is an outline form, contrasting the situation three years ago with that of today.

1. Teachers went home for lunch, leaving only one or two in charge; they were supposed to watch the playground as they ate their own lunches.

2. Children ate their lunch hurriedly while trying to play. They did not take time to wash their hands. Paper and scraps were thrown on the grounds.

3. The children living in town rushed home and ate hastily, but frequently loitered on their way back to school and were late for the afternoon session.

4. The idea of a time to eat and a time to play was confused in the minds of the children.

5. The teachers had no opportunity for checking up on the type of lunches that were brought.

6. Very few brought fruit and practically none brought milk.

7. Many of the students would go up town and buy cakes, candy and soft drinks for their lunch.

8. There was no social value in the lunch period, since the students ate by themselves.

Now

1. Teachers eat with students and are ready to supervise games during the play period.

2. Children do not rush while eating their lunch. They wash their hands beforehand and paper and scraps go into the waste baskets.

3. Town and country children get better acquainted and learn to appreciate each other more by eating together. There are no tardinesses in the afternoon, because no one is allowed to leave the grounds during the play period.

4. The children understand that eating and playing should not be done at the same time.

5. The teachers have an opportunity for helping the students to improve the quality of their lunches.

6. Individual needs and cases of undernourished children are given attention.

7. About 75 per cent of the children bring fruit daily and more than 50 per cent bring milk. The number of children bringing fruit and milk has increased rapidly.

8. Children are kept off the streets during the play period and therefore have no opportunity for buying harmful things to eat and drink.

9. There is a distinct social note in each room during the lunch period, which is perhaps the most valuable point in favor of the supervised lunch idea.

After three years of trial the Fountain School would not go back willingly to the old way of handling the lunch situation. The results have been so gratifying that the school would much rather strive to improve further its supervised lunch period.

MRS. MYRTLE B. CLARK,
Pitt County,
Greenville, N. C.

HOW TO STUDY THE MUSCLES AT FIRST HAND

IN OUR ardor for book learning we sometimes forget to study the things that are at hand waiting for our observation. We study in books the diagrams of the musculature of the trunk and limbs quite oblivious of the fact that the real muscles lie just beneath our skin. Pupils of all ages are eager to study their own muscles and report their discoveries to the class.

Begin by asking the pupils to place the right hand on the left arm above the elbow while they bend that joint. How do the muscles change (a) in length, (b) in thickness, and (c) in hardness as they work? When the pupil has learned that the muscle gets shorter, thicker and harder in contraction, he should make various movements and find the muscles that produce each motion. The movements should be made against a resistance; for example, the hand should be closed over a ball or book instead of being empty.

The pupil will mistake moving tendons for muscles if his attention is not called to the fact that muscles are soft and long when relaxed while a tendon does not change in length or diameter and is always firm. The movements should be made slowly and repeated while the hand is feeling for the changing muscle.

Since most of our muscles are in antagonistic sets, when one set is contracting its opposing set is relaxing. Pupils must be careful to distinguish the muscle that contracts to produce the movement under study from its opposing muscle that contracts to produce the reverse movement. For example, the heavy muscles that clinch the fingers are on the inside of the forearm while the muscles that open the hand are on the outside.

The following questions are suggested: Where are the muscles that (1) close the hand, (2) open the hand, (3) bend the wrist, (4) straighten the wrist, (5) bend the elbow, (6) straighten the elbow, (7) swing the arm up at the shoulder, (8) pull the arm down, (9) contract when you rise on your toes, (10) contract when you stand on your heels, raising the toes, (11) bend the knee lifting the foot backward as you stand, (12) straighten the knee pushing the foot down, (13) contract to bring the body to a sitting position as you lie on your back, (14) bring your body erect from a forward bend, (15) bend the head, (16) raise the bent head, (17) close the jaws, and (18) lower the jaw?

On some of these questions (9 and 10) the pupils should work in

twos, one observing while the other moves.

While each pupil is busy studying his own body, the teacher may call up groups of four or five at a time and demonstrate on the foreleg of a sheep the muscles that correspond to those in the human arm. He should call attention to the membranes which cover the muscles, the fastening of the muscle to a bone at one end and the taper to a long tendon at the other end, and the way the tendons, encased in slippery sheaths, play over the wrist joint to reach the fingers (toes).

RALPH E. BLOUNT,
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NEW HEALTH BOOKS AND TEACHERS' MATERIALS

IT IS difficult for teachers to recommend to parents books on child training, because so many of them do not deal definitely with parents' problems or are written in language that not all parents can understand. Elizabeth Cleveland in "If Parents Only Knew"[1] has written a practical book that will be of use to both parents and teachers. It has chapters on health, command of tools and fundamental processes, worthy home membership, vocation, recreation, citizenship and character. The book is attractively written and it is organized around the center of cooperation between the home and the school.

At the end of each chapter there is a unique "Cooperative Parent's Catechism," which is a definite challenge to parents. The catechism after the chapter on health starts as follows:

1. Have I attended to each child's annual physical examination and semiannual dental inspection?
2. Do I know just how far each child compares with the average physical standard for his age?
3. Do I know just what to do to bring him up to standard if he is below par?
4. Am I proceeding systematically to do this?
5. Am I getting results?
6. Have I established a regular physical regimen (meals, bedtime, bathing, etc.), which is rarely broken?
7. Am I keeping up to date through reading, lectures, class work, or with the assistance of the school, on nutrition, posture, sleep, fatigue and other subjects relating to child health?

1. Price, $1.75. Pp. 153. W. W. Norton and Company, New York, 1929.

At the end of each chapter there is also a list of suggested parent-teacher activities.

Parents, teachers and leaders in parent-teacher activities will find this book helpful and stimulating. One of the best things in the book is an appreciation of Elizabeth Cleveland written by Dr. Helen T. Woolley of Teachers College, Columbia University. It is a picture of a teacher with a vision.

THE teaching of any subject demands (1) a knowledge of the subject matter to be taught, (2) a mastery of the fundamental psychologic principles underlying methods in general, and (3) a command of the particular methods as applied to the teaching of a special subject.

The authors of "The Teaching of Home Economics"[2] have assumed that the student is familiar with the subject matter of home economics and have considered in detail the general and specific principles of method required in teaching this subject. Every page bears evidence of clear thinking and painstaking care. The teacher who studies this book thoughtfully will have a good grasp of psychologic principles in relation to the teaching of her subject and a clear conception of her aims. The last chapter in the book and one of the best is entitled "How to Grow Professionally."

THE rural teacher working with several grades and with inadequate equipment needs all the help that she can get to do her work effectively. Teachers in Illinois are fortunate to have issued to them "Aids to Teachers and School Directors of the One-Teacher School."[3] It has chapters on the organization, aims, values and methods desired in one-room schools. There is nothing in this bulletin on the teaching of hygiene, but there are excellent chapters on heating and ventilating, lighting, seating, and the water supply. The bulletin would be more usable if it had a table of contents and an index.

THE school health and welfare publications of the Metropolitan Life Insurance Company are so good that teachers should treasure each bulletin issued. The latest, "Adventuring in Health"[4] is no exception to this rule. Twenty years ago this bold organization set out to reduce illness and death among its policy-holders. In 1911, thirteen out of every 1,000 policy-holders died. In 1927, eight out of every 1,000 industrial policy-holders died. More than $32,000,000 was spent by the welfare division between 1909 and 1927, but during this time $75,000,000 was saved in death claims.

This amazing story is told graphically by graph, charts and pictures. Some of this material could be used by the teacher to show that the practice of hygiene pays rich returns.

TO KNOW nothing about educational measurements today is to be almost illiterate professionally. The health educator like everybody else working in the general field of education needs to know what educational measurement means, how tests may be given and evaluated and the fundamentals of elementary statistical methods. Drs. Fenton and Worcester have rendered teachers a distinct service by writing this brief and elementary text[5] on educational measurement. It presents in simple and direct form the essence of the recent contributions to the subject that would be of practical interest and worth to the classroom teacher.

THE fourth volume of "The Children's Own Readers"[6] shows the result of the process of enrichment of modern school books. The authors have introduced in a clever fashion several interesting stories on safety and fire prevention.

The first story is entitled "The Fire Engine That Lost Its Way." A purposive attitude is aroused by the following questions preceding the story: "If you should discover a fire in what different ways would you notify the fire department? Which is the safest way? The following story will tell you." At the end of the chapter there are several questions on the content of the story.

RESULTS in education are dependent on carefully prepared plans. Dr. Williams in "The Making of High School Curricula"[7] does not deal specifically with hygiene or any other subject but he does outline clearly the principles and procedures involved in developing curriculums for the modern high school. The historical development of curriculums and modern practice and scientific procedure for those who wish to build high school curriculums are treated clearly and with practical suggestions.

2. By Clara M. Brown and Alice H. Haley. Pp. 395. Houghton Mifflin Company, Boston, 1928.
3. Issued by Francis G. Blair, Superintendent of Public Instruction, Springfield, Ill., 1927.
4. Pp. 32. Metropolitan Life Insurance Company, New York, 1929.
5. An Introduction to Educational Measurements. By Norman Fenton, Ph.D., and Dean A. Worcester, Ph.D. Pp. 149. Ginn and Company, Boston, 1929.
6. By Mary E. Pennell and Alice M. Cusack. Pp. 383. Ginn and Company, Boston, 1929.
7. By L. A. Williams. Pp. 233. Ginn and Company, Boston, 1928.

New Books *on* Health

Reviewed by
Morris Fishbein, M.D.
and Others

HUMAN HISTORY

By G. Elliot Smith. Pp. 472. Price $5. W. W. Norton & Company, Inc., New York, 1929.

THE learned author of this survey of man's rise from the primitive to his present higher civilized state emphasizes in the preface of the work the relation of the body of man to his progress. With culture came cruelty, social unrest and danger. From the earliest times men have sought most of all for an elixir that would guarantee eternal life if not perpetual youth. The next great quest of man has been for happiness, freedom from pain and disease.

Even the earliest of men realized the importance of blood as the life-giving fluid and the earliest symbols for life and the avoidance of the evil eye were red and definitely related to the conception of blood. The human brain and its powers distinguish man from all other animals. Learning is most highly developed in the human being and through learning men provide for the continuity of knowledge and for advancement.

In his earliest chapters Professor Smith traces the wanderings of primitive men and their industries. Human history begins about 4,000 years B. C., but manlike apes roamed the earth one million years ago, and creatures approximating man existed perhaps fifty thousand years ago. Even five thousand years ago there were already established races of men, and to these Professor Smith next turns his attention. He follows the plan of the ethnologists in tracing the evolution of modern culture by studying that of the savage tribes, among which primitive conditions exist.

This book ends logically with Greece, the fountain head of modern culture and of the beginnings of science as actual observation. Professor Smith conceives the life of the future as a continuous warfare between the science and culture of Greece and the superstition and magic of Egypt.

This book is more dependable historically than Wells' Outline, far more suggestive of philosophic thought; perhaps on the whole better written. Certainly it deserves as great an audience as was accorded to Mr. Wells' more highly exploited work. M. F.

Poster by Dr. Alfred Soppelsa, Innsbruck, for use in the Austrian child health stations.

THE COMMONWEALTH FUND ACTIVITIES IN AUSTRIA

By William J. French, M.D., and Geddes Smith. Pp. 131. The Commonwealth Fund, Division of Publications, New York, 1929.

EVER alert, as is the Rockefeller Foundation, in giving financial aid to the cause of public health, the Commonwealth Fund has completed six years of cooperation with Austria in the field of child care. No nation was more impoverished by the war than was Austria, and loss of territory, economic isolation and social revolution have made healthful living extremely difficult.

Austria has, however, built up an effective system of child care and with the technic and money furnished health workers there by the Commonwealth Fund great progress has been made. Since the fund program got completely under way, the Austrians have more than matched with their own funds every dollar of American money given for salaries and equipment. The six year health enterprise of this American organization was brought to an end last July.

The story of the Commonwealth Fund activities in Austria, first published in German for Austrian distribution, has recently been brought out in permanent form for American circulation. It is a handsome volume printed on rich stock, with generous margins, readable type and illustrations of striking beauty. M. W.

THE LAYMAN LOOKS AT DOCTORS

By S. W. and J. T. Pierce. Cloth. Pp. 251. Price $2. Harcourt, Brace and Company, New York, 1929.

A NEURASTHENIC woman and her husband tell in this volume of the woman's experiences with a succession of doctors and sanitariums extending over a period of about four years. One gains the impression that the patient thoroughly enjoys "getting back" at the distinguished specialists who one after another undertook her cure. All, with the exception of the last, were approved by the patient's father, who was a physician.

The individual peculiarities of approach and of method of the several specialists are depicted in interesting and amusing detail. Incidentally the description of the routine procedure of Dr. Olyphant, the great diagnostician, who invokes the aid of a crew of specialists to examine and submit to him reports in their specialties affords a commentary on the high cost of medical care.

The terminal procedure in this therapeutic tour, designated by the authors as the treatment by common sense, is the Freudian method of psychoanalysis.

The father of the patient, Dr. Willard, who had been skeptical of the psychoanalytic procedure from its inception, continues unconvinced that the cure has been effected by this means. He points out that her first physicians, after becoming satisfied that the patient had no organic trouble, predicted that she would recover spontaneously in time. The father is by no means certain that the neurasthenia may not recur.

The book is interesting as a commentary on the present day practice of various types of neuropsychiatry. J. M. D.

A CORRECTION

With the reproduction of the chart "The Human Factory" in HYGEIA for September, 1929, appeared the following note: "By special arrangement with Franckh'sche Verlagshandlung, Stuttgart, Germany." Unfortunately the name of the author, Dr. Fritz Kahn, was omitted. The chart was taken from his work "Das Leben des Menschen," reviewed in December.

Questions *and* Answers

If you have a question relating to health, write to "Questions and Answers," HYGEIA, enclosing a two-cent stamp. Questions are submitted to recognized authorities in the several branches of medicine. Diagnoses in individual cases are not attempted nor is treatment prescribed.

Chromosomes

To the Editor:—What basis have we for the belief that the number of chromosomes in any species is constant, and is it an actual fact that there are forty-eight in the human species? Is there a special reason for there being forty-eight in man?

J. G., Iowa.

Answer.—Chromosome counts of large numbers of cells show that there is no variation of chromosomes in normal tissues within the species. The same methods are used for man. There seems to be no known reason for the particular chromosome numbers of any species. Some lowly species have higher numbers than man, others lower.

Chocolate Milk

To the Editor:—We are having some conferences on whether or not the chocolate milk prepared by the dairy loses much of its butter fat. Will you kindly advise us concerning whether pasteurized milk from which butter fat has been reduced to 3¼ per cent and to which cocoa has been added loses the different vitamins. What is the percentage of the loss, if any?

C. M., North Carolina.

Answer.—Chocolate milks are made by a variety of processes, and it is impossible to speak with accuracy about the butter fat content of chocolate milk in general. The chocolate milk made by a well known dairy company in Chicago consists of an emulsion of skimmed milk, sugar, cocoa and cream, in such proportions that the product contains 1 per cent butter fat. Other chocolate milks sold in Chicago are made from skimmed milk, sugar and cocoa, and they contain no butter fat. Other chocolate milks are made from whole milk and they contain from 3 to 3½ per cent butter fat.

No studies have apparently been performed directly on the vitamin content of chocolate milk. Since there is no heating in the preparation of chocolate milk, it is safe to say that the vitamin content of chocolate milk is the same as the vitamin content of the milk used in its preparation, except for an almost negligible factor of dilution. Since pasteurized milk is deficient in vitamin C and the antineuritic factor of B, the chocolate milk would also be deficient in these vitamins.

Prepared Milk

To the Editor:—Will you kindly tell me what kind of canned or powdered milk is best to use? Any information concerning the comparative food values and vitamin content of prepared milk will be greatly appreciated.

R. M. W., Alaska.

Answer.—There is little difference in the brands of preserved milk that can be purchased in the market at the present time. Those brands that are preserved by the addition of cane sugar, the so-called condensed milks, are not to be recommended for continued use by infants, as the excess of sugar is not advisable in this earlier period of life.

The so-called evaporated milks in which the milk is evaporated to one half or one third its original volume are excellent foods. It would seem, however, that a milk powder would be most convenient and satisfactory for use in Alaska, especially during the cold months when the freezing of any liquid milk is likely to occur.

Evaporated, unsweetened and dry milk preparations are evaporated at low temperatures, and when made from whole milk the vitamin content is not materially diminished in amount or seriously impaired.

Knock-Knees

To the Editor:—Will you kindly advise me if there is any exercise or any way to cure knock-knees in a child of 3 years? The child has been knock-kneed since birth; the condition was not caused by rickets.

H. O., Florida.

Answer.—By the age of 3 years, the bones have become practically set in most children and probably little can be accomplished by manipulation or apparatus in the correction of such a deformity as knock-knees. In later years, if the deformity is still pronounced it can be corrected by a surgical operation. The important thing now is to have the advice of a competent orthopedic surgeon. The family doctor can refer the inquirer to some specialist in this field.

Reenameling of Teeth

To the Editor:—Do you know of a dentist who can reenamel the teeth? J. A. B., Pennsylvania.

Answer.—Reenameling the teeth may mean several things: It may mean using porcelain inlays or silicate fillings for cavities, or it may mean, and probably does mean in this case, the use of porcelain jacket crowns completely to cover a badly broken down tooth, the entire exposed portion of the crown being restored with porcelain. HYGEIA does not recommend individual dentists or physicians.

Diphtheria

To the Editor:—My little boy, 6 years old, is just recovering from diphtheria. Wherein lies the danger of heart trouble? He took 20,000 units of toxin-antitoxin. Is he immune to the disease now? My other boys, 11, 13 and 15 years old, took 1,000 units. How long will they be immune? How is the disease contracted? Please give me as much information as is consistent with your general policy. J. H. H., Arkansas.

Answer.—What is spoken of as toxin-antitoxin in the letter probably refers to diphtheria antitoxin. Diphtheria toxin-antitoxin is given to produce immunity and is effective only after several weeks. Diphtheria antitoxin is given for its immediate effect, either for the cure of active diphtheria or to protect from infection in the presence of exposure.

The principal danger of heart trouble in diphtheria is from changes in the heart brought about by the diphtheria poison or toxin. Appreciable injury to the heart does not occur if antitoxin in sufficient dose is given promptly. The danger of heart complication increases in proportion to the interval between the onset of the disease and the time antitoxin is administered.

After recovery from diphtheria treated by the prompt administration of antitoxin, the individual is often not permanently immune. This can readily be determined by the Schick test. One thousand units of antitoxin confers immunity for only a short time; that is, from two to six weeks.

Diphtheria is contracted by the entrance into the mouth, throat and

nose of diphtheria bacilli from a previous case or from a healthy carrier of the bacilli. The transfer may be accomplished by the inhalation of small moist particles of infected secretion driven into the air in coughing by the person with diphtheria or by a carrier. More often the transfer of the bacilli is through contaminated objects which act as carriers, such as the hands, eating utensils or toys.

Glioma; Gliosis

To the Editor:—1. What is glioma of the brain and what are the symptoms? What are some of the chief causes? Has this lesion ever been cured? In what way will it kill a person? 2. What is gliosis and what are the symptoms? Is it curable?

S. M., New Mexico.

Answer.—1. Glioma is a tumor of the brain. It is made up of cells and fibers like those which form the supporting framework of the brain. The cause is wholly unknown. The symptoms vary widely according to the portion of the brain in which the tumor occurs. They are due to the pressure exerted by the tumor on the surrounding portion of the brain. In some cases it is possible to remove the tumor by surgical operation. It is not curable in any other way.

Death is due to the disturbance and destruction done by the pressure of the growing tumor on the normal brain.

2. Gliosis is an overgrowth of the same sort of tissue that makes up the glioma. This excessive growth may not take the form of a tumor but may be disseminated. It is not curable by any kind of medicine.

Tuberculosis in Child; Backache

To the Editor:—1. Is it dangerous for my little girl, 5 years old, to play with a child who has tuberculous glands and a cough? 2. I am a woman, 30 years old. I am troubled with backache just below the waist. I have a deep-seated pain in the upper part of my legs and also at the end of my spine. Can you tell from these symptoms what is wrong? I also get a white discharge, for which the doctor has given me an antiseptic powder to use as a douche.

J. D. B., Illinois.

Answer.—1. The little girl should certainly not come in close contact with a child with a cough and tuberculous glands. It is true that tuberculosis is so widespread that it is probably impossible for any person to be absolutely isolated from the chance of contact with persons who might transmit the disease, but one of the best established facts is that children particularly should be kept as free as possible from the danger of contagion.

2. As to the mother it is not possible to advise in the absence of a personal examination. The thing to do is to follow the advice of a good physician as to treatment.

Diabetes

To the Editor:—I have been told that a diabetic patient would benefit greatly by eating foods rich in vitamin B. Will vitamin B take the place of insulin in the treatment of diabetes? Will you please publish a list of foods rich in vitamin B?

E. M. F., Nebraska.

Answer.—There is no satisfactory evidence that the requirement for vitamin B in diabetes is any different from that of normal individuals. Vitamin B will not take the place of insulin in the treatment of diabetes.

A list of foods that are rich in vitamin B follows:

Results of Quantitative Experiments upon Vitamin B Contents of Foods

	Units of Vitamin B* (Approximate)	
	Per Pound	Per Ounce
Apple, raw	100–160	6–10
Beans, green, string, raw	150	10
Beans, navy, canned baked	300–400	20–24
Bananas	100–160	6–10
Beef, clear lean steak	about 160	about 10
Cabbage	150–300	9–18
Cantaloup	about 130	about 8
Carrot	120–140	7–9
Cereals (whole grain, including embryo)	800–1200	50–75
Egg	about 260	about 16
Egg yolk	about 800	about 50
Flour, white	(Too little to be measured by present methods)	
Grapes	120–140	7–9
Lemon juice	about 150	about 10
Lettuce	150–200	10–12
Milk	about 150	about 9
Milk, dry	about 1200	about 70
Onion	about 100	about 6
Orange juice	about 150	about 9
Peaches, raw	100–160	6–10
Peas, raw	about 1000	about 60
Potatoes	about 130	about 8
Prunes, dry	about 600	about 38
Spinach	300–400	20–24
Tomato	130–250	8–16
Turnip	about 130	about 8

* The unit of vitamin B, as used in this table, is that amount which when fed as a daily allowance results in net maintenance of a standard rat over an eight-weeks period under rigid laboratory conditions.

Chloroform Anesthesia

To the Editor:—I have recently heard that the use of chloroform in anesthesia was condemned by the medical profession. Is this report correct?

E. P. S., Illinois.

Answer.—Chloroform was for many years used almost exclusively for surgical and obstetrical anesthesia. Long after it was replaced by ether for surgical operations in America, chloroform continued to be administered intermittently as the anesthetic of choice in obstetrics. It is still used to a considerable extent in England and many tropical countries. However, in most American hospitals its use is now limited to the occasional case where the explosive types of anesthetics such as ether and ethylene gas cannot be used.

For ordinary surgical and obstetrical cases chloroform is shown by statistics of mortality to be somewhat less safe than ether or gas-oxygen. When properly used, however, chloroform still has some definite advantages, which make it an anesthetic agent that cannot be entirely discarded.

Coccidioidal Granuloma

To the Editor:—Can you give me information about a disease said to be caused by fungi in the blood? A cousin of mine, aged 66, was stricken weeks ago with influenza symptoms with chest and bladder complications. Many doctors were consulted and at last cultures from two abscesses showed fungi. I understand that this trouble exists in San Joaquin Valley, where my cousin visited several months ago. He died recently in Los Angeles. I have a vague memory of reading something about this trouble. I believe it is a rare and obscure disease. Serums were used the last week or two, but with what effect I have not heard.

J. A. S., California.

Answer.—Coccidioidal granuloma has been proved to be a definite entity, caused by the fungus *Coccidioides immitis.* This disease resembles systemic blastomycosis and tuberculosis but is entirely distinct from them. In a large majority of cases the initial symptom is pulmonary, the early complaint being pain in the chest, cough and expectoration of a frothy liquid, accompanied by rapid loss of weight. Other early symptoms are attacks of moderate chills, fever, general malaise with headache and loss of appetite. Meningeal symptoms are often observed. Cases are on record in which lesions developed after injury or trauma.

Later there is generally experienced pain with swelling in some portion of the soft tissues, especially glands, bones or joints. When these swellings are opened they discharge a thick, greenish yellow tenacious pus and the wound does not heal. In some cases the primary lesion is in the form of a granuloma appearing on the skin. The macroscopic and microscopic appearance of the lesions resembles the lesions of tuberculosis so closely that a differential diagnosis can be made only by demonstrating the presence of the organism in the tissues or by culture. The fatality rate in coccidioidal granuloma is high.